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Editorial Notes.

Restoring the Coal Industry through Public Utility Concerns.

REPORTS from various centres suggest that in industrial and commercial circles the selling schemes of the coalowners are not being regarded with any particular favour—in fact, resentment is brewing. We will give the coalowners credit for having been perfectly frank as to their intention, which is to compel all public utility concerns—such as gas and electricity undertakings, public institutions, and railways—to balance their deficiencies, on the ground that they are in the position to recover the additional cost of coal by raising their charges to the public. In the case of gas, this would mean inflicting the extra cost upon the gas consumers—a large proportion of whom are prepayment ones—and this at a time when the industry is working hard to assist in that national advantage of reducing the consumption of crude coal for domestic purposes, and thus helping to realize healthier atmospheric conditions. We are not sure the colliery owners approve of, or are any too sympathetic towards, this beneficial work, seeing that only just recently the Coal Merchants' Association were proposing that the Mining Association should join hands with them in an attempt to "popularize" the use of domestic coal. In justification of the action of the coalowners, or those who represent 80 to 90 p.ct. of the output in the quarters of the coalfields concerned in the schemes, it is said that the gas and other public utility industries do not pay their proper proportion of the charges involved in coal raising, while the domestic consumers and the other industries do. Perhaps that would not bear very critical examination. We can quite understand that the coalowners are rather afraid to inflict an additional cost for fuel upon industries which have been badly hit in late years; we can quite appreciate, too, that they have no intention of adding to the cost of coal to their own coking plants, the gas from which they want the gas industry to purchase from them for distribution and sale; and therefore, whether or not they admit it, it is obviously to their direct advantage to make the cost of the raw material of the gas industry as high as they possibly can.

The position is an interesting one; the coalowners concerned in the schemes are also proposing to make it an inequitable one. If any industry should receive from them exceptional consideration, it is one which maintains a consistent all-the-year-round demand, and no industry does this with greater fidelity than the gas industry. That is a distinct economic advantage to the collieries, but the promoters of the schemes do not take it into account. On the contrary, instead of raising the price of their production by a small amount all round, they are contemplating making the public utility concerns pay all they require, and letting the other buyers go free. In the case of the gas industry, what will be the effect? The price of gas will have to bear the additional cost of its production; and it will be the gas industry which, through this, will be virtually acting as collectors from the public for the coalowners of the additional money which they say they intend to draw from the industry—collectors of money from the very people whose payments for domestic coal the coalowners declare they do not desire to raise. Mr. A. W. Archer, the Vice-President of the West Yorkshire Coalowners' Association, and a prime mover in the Five Counties scheme, makes, in his propaganda in its favour, a great point of the distressed coal industry supplying fuel below cost to the flourishing sheltered trades—"gasworks, electricity works, and others are all flourishing on cheap coal—on coal supplied by the collieries at much less than cost." It is perfectly manifest that, without the large business from these trades, the price of coal to other consumers would have to be largely increased. Again, it is noted that a Scottish writer, in an article on the scheme of the coalowners across the Border, makes a statement which is confirmatory of one published when the plans first obtained publicity: "The first active step "of the scheme is the imposition of an increase of 1s. 6d. "per ton in new contracts with public utility concerns "such as gas and electricity undertakings, public institu-"tions, and railways—in fact, any organization which is "able to pass on the cost to someone else." The intentions of the coalowners who have given their adherence to the Five Counties and the Scottish schemes are therefore clear.

We rather think those coalowners who are standing-out from the schemes will not find themselves lacking for orders; and, from what we hear, not a few of the owners who have entered into the schemes are sceptical as to their duration. They feel confident that ways and means will be found to make them ineffective, and that the large buyers who have been selected to bear the burden of the deficiencies of the coal industry are not likely alone to take charge of and liquidate them in the docile spirit anticipated by some of the more spirited promoters, who are possessed of overweening confidence. There are long contracts running for coal to many public utilities; and the doubting coalowners correctly see that in those cases nothing can be done effectively until they expire. Moreover, only recently other contracts have been made at acceptable prices before the schemes came into operation. It is difficult to get a competitive industry, and one the costs of the units of which depend so much upon keeping the pits as highly productive as possible, under complete rule and regulation; and we should not be astonished if before long, when it is found that large purchasers cannot be brought under regulation as to where they shall place their orders, there were withdrawals from the schemes. The incidence of economic adjustment in the coalfields must be better arranged than is the case under the crude plans now before the country.

The Charter and Other Topics.

As will be seen from the minutes of the meeting of the Council of the Institution of Gas Engineers on Monday of last week, various matters of more than ordinary interest occupied attention. The most prominent one was the consideration of the draft of the petition for a Charter for the Institution, the Charter itself, and the revised By-Laws. These documents have now the approval of the Council, and are ready for placing before the corporate members at the meeting, which is to be held (with the President, Mr. H. D. Madden, M.Inst.C.E., in the chair) at the Institution of Electrical Engineers, at 11 a.m., on April 2. After the very careful consideration which the Petition, Charter, and By-Laws have received from the Council, we have not the slightest doubt that the members of the Institution will give to the main proposal and the attendant changes their unanimous and hearty support. As the Senior Vice-President (Mr. John Terrace) pointed out, one result of the adoption will necessitate a certain amount of revision in connection with the Education Scheme; but we take it this will be more or less a formality for the Education Committee and the Council of the Institution. Such an important movement as the petition for a Charter, which will advance the status of the Institution and its members, while increasing the potentialities of the organization, is bound to draw to the meeting a large number of members, to hear the explanations which will be made regarding the three documents. As has already been pointed out, the day's interest will not be confined to this single, though important, matter. Through the kindness of the Governor (Sir David Milne-Watson) and Directors of the Gas Light and Coke Company, the members of the gas profession in London for the meeting are to have an opportunity of inspecting, at the Staines station, the constructional work in progress in connection with the waterless gasholder, as well as the new apparatus for drying gas, which has been erected by Messrs. W. C. Holmes & Co., Ltd. A punctual start by motor coaches will have to be made at 2.15 from Grosvenor Gardens. One other matter which was before the Council at their meeting deserves reference. From a statement made by Mr. Charles F. Botley, a special meeting of the Effluents Committee is to be held for the purpose of considering a suggestion that the Institution should take up questions relating to the manufacture of sulphate of ammonia, in order that gas undertakings throughout the country might adopt measures to ensure a profitable sale for the sulphate produced by them. In this connection, there was mention by the Junior Vice-President (Mr. C. S. Shapley) of the generosity of the Yorkshire Commercial Section of the Manchester District Institution of Gas Engineers in handing to him a cheque for £150 to be utilized by the Institution for research work on ammonia, or in some other way which would be of advantage in the same direction. This generosity of the Yorkshire Commercial Section was, as it deserved to be, very heartily acknowledged.

Housing Estates and Undedicated Roads.

THE only opponent to the Bill of the South Metropolitan Gas Company, when it came before Sir Arthur Shirley Benn's Committee in the House of Commons on Tuesday of last week, was the Woolwich Borough Council. The fact has double significance. In the first place, it shows that the Company's financial proposals—including the additional capital and borrowing powers, and the fixing of the basic dividend on new stock at 5 p.ct., which will cause it to keep level company with the existing stock—have met, after careful consideration, with the approval of the London County Council, and all the other authorities concerned. The second point is that the only opposition of the Woolwich Borough Council was to clause 20, which is an old-established provision in Special Gas Acts and in the Model Clauses. It gives a right to undertakings, with the consent of the owners or occupiers, to lay mains in roads not dedicated to public use, and to give a supply of gas at the request of the owners or occupiers of premises abutting on such roads. There is nothing new in the clause. It has appeared in upwards of 150 Acts during the last twenty years, to say nothing of those concerns which may, prior to that period, have obtained its insertion among their statutory powers. Regarding the structure of the clause, the statement was made to the Committee by the Hon. Evan Charteris, who appeared for the Borough Council, that the Model Clause said that a supply could not be given in non-dedicated streets without the consent of owners "and" occupiers, while clause 20 in the Company's Bill proposed that the word "and" should be "or," which, of course, makes a distinct difference. In the Model Clauses issued in 1914 and 1922, the word "or" does appear; so that it has abundant justification, not only in the Model Clauses, but in a mass of precedent, for its appearance in the Bill of the South Metropolitan Gas Company.

We presume the application for the clause by the Company was instigated by the policy of the Woolwich Borough Council in respect of the Eltham Housing Estate, which has become famous in both gas and electricity circles, owing to the discontent of a large number of the tenants at not being able to secure a gas supply, and thus being compelled to patronize the Council electricity undertaking, or alternatively to have recourse to oil lighting, cooking, and heating. The roads on the Eltham Estate have not yet been dedicated to public use; and, therefore, under the general law the Gas Company could not, without a special clause, lay their mains and give a supply to the occupants of the Council's houses if so desired by them. The history of this Eltham business as related by Mr. H. P. McMillan, K.C., who appeared for the Company, is well worth reading, and will be found reported to-day in our "Parliamentary Intelligence." But it is the decision of the Committee which mainly concerns us. The Chairman said the whole point at issue was a matter of principle; and therefore it was unnecessary to enter into detailed evidence. But it seems to us that the Committee took into consideration only one of the two points of principle which are present. The point which they considered, and upon which they gave a decision—although they had a splendid opportunity of taking the other one into account—was as to whether the Company should have the right of laying mains in undedicated roads with the consent of occupiers only, and not of the owners, who are the local authority; and they decided that the preamble of the Bill should be passed on the condition that the words "or occupier" were deleted from clause 20. In other words, the consent of the Borough Council must be obtained before mains can be laid on the Eltham Estate, while the streets remain undedicated to public use. Why the Committee should have come to this singular decision, after the form of clause which the Company proposed had been endorsed by Parliament for such a long number of years, is, to say the least, peculiar. The history of the matter shows that the Woolwich Borough Council are determined to protect, as long as possible, the business of their electricity undertaking on this large estate, and prevent full competition with it in the houses of their tenants. The tenants are representative of the public; and it seems to us that it is an entirely wrong thing for Parliament to inflict in any way whatever upon those tenants a condition in respect of patronage of any commodity which does not apply to any other section of the public of Woolwich. The words "or occupier" were a protection to them against a policy which chained them, whether or not they like it, to a municipally run electricity undertaking, and to the most expensive form of heat. Therein we find, even if the members of the Committee do not, a principle affecting the rights of the public which transcends in importance the one that the consent of the owner of undedicated roads should be obtained before mains are laid, even though those roads are lined with houses, and are in occupation of members of the general community. It is true that the Chairman of the Committee stated that the action of the Borough Council in this matter had given the Committee cause for anxiety; but that anxiety did not find any expression in their decision. However, probably the members will agree with us that, within the country, rational "free trade" is better for the community than municipally created "protection" for an electricity undertaking.

In regard to the decision, it may be that a reply the Hon. Evan Charteris gave to an inquiry by the Chair-

man had some weight with the Committee. This was to the effect that the streets on the Eltham Housing Estate would be dedicated to the public in due course—in fact, the Council anticipates that all the roads will be dedicated within about six months. That being so, we fail to see any substantial reason for the Borough Council opposing the clause in the Company's Bill. Whether the Council will keep their promise remains to be seen. If they do not, manifestly that would be sufficient ground for the Company making a further appeal to Parliament to give them the clause in the form in which it appeared in the 1914 and 1922 Model Clauses, and in conformity with the large amount of precedent which exists. At any rate, if the Council carry out the intention, as expressed by their Counsel, to dedicate the roads within the next six months, the Company under the general law will then have the right to lay their mains, and to give, at the request of tenants, the gas supply which numbers of them desire in view of the inefficiency and costliness of the electricity service, which have compelled in so many cases the purchase of oil-using appliances for lighting, heating, and cooking. Why should any section of the public be exposed to that sort of thing, and have their purchasing freedom curtailed, when Parliament can put an end to the autocratic action which brings about the condition? The ability was proved in the Newport (Mon.) case.

Steaming Horizontals—A One-Shift Gas-Works.

IT is a long time since anything has been heard regarding the process of steaming charges in horizontal retorts. There have been many workers and many trials; but, so far as we know, practice has not been continued to any great extent. On a later page, we give some particulars of the experiences of Mr. H. Pickford, Manager of the Farnworth and Kearsley Gas Company; and there is novelty in them, inasmuch as, by steaming, Mr. Pickford only requires stokers during one eight-hour shift—from 8.30 a.m. to 4.30 p.m. Thus, with the exception of the fireman, who attends to the filling of the furnaces, labour is only required during eight hours in the daytime. According to our last annual returns for Farnworth, the make of gas is 164·8 million c.ft., and the declared calorific value 480 B.Th.U., so that the therms produced are 791,040 at the declared value. The coal carbonized is a mixture of 50 p.ct. slack, 30 p.ct. nuts, and 20 p.ct. screened coal. The carbonizing period is twelve hours; and steaming proceeds for the remaining twelve hours until the stokers return for the next day's eight-hour shift. The steam is admitted at a pressure of 5 lbs. Last year the make per ton was 15,416 c.ft., and the calorific value of the gas supplied 486 B.Th.U., which is equivalent to 74·92 therms per ton of coal. The coke sold last year is on the low side—6·86 cwt. per ton of coal; but the tar produced averaged 11·08 gallons. Now Mr. Pickford does not pretend that this system of working has not its disadvantages as well as its advantages. But there is no question that he is fully satisfied with the final financial result of his operations, or he would not continue them. Nevertheless, that is the point regarding which his professional colleagues would like to have more information. Working only one eight-hour shift in 24 hours, there is, of course, a saving in stokers' wages. Mr. Pickford finds too that the wear and tear on the retorts is lessened. This is quite possible with only one charge and discharge per day, and the fact that the retorts are subjected to less temperature variations than is the case with eight-hour discharging and re-charging. On the other hand, steaming may have a little counter wear and tear effect. In addition to the increase in gas production, he finds little carbon deposit, and has no trouble from stopped pipes or naphthalene deposits, which again means economy in labour. On the other hand, he has to employ 20 p.ct. more carbonizing plant than would otherwise be the case. The saleable coke is low, and the liquor is only about 6 or 7 ounce strength instead of 10, which seems to indicate that an appreciable amount of the steam escapes decomposition. Extra cost is involved by the steaming; but this is mainly for fuel, and, using breeze and recovered coke, it does not constitute a very material item. The experience is interesting and suggestive.

On the Therm Basis.

THE National Gas Council have issued their annual compilation of the Orders granted, under Section 1 of the Gas Regulation Act, up to Dec. 31 last. Investigating the information given, it is seen that during the past year progress in the adoption of the therm system has not been rapid. Of course, in respect of gas output, the undertakings which are not on the therm system would represent a very minor part, as compared with the output of the undertakings who are on it. The tabulated data show that 586 undertakings are now on the therm basis, which is an increase of seven compared with 1926. According to the Board of Trade Returns for 1926, the statutory gas undertakings numbered 784. Thus, taking that figure, there are still 198 concerns which should be on the therm system, but have not yet made application. Nevertheless, in respect of undertakings, 74·75 p.ct. are on the therm system; and the percentage would be higher if calculated on the basis of gas output.

The tables show that, at Dec. 31 last, there were 24 declared calorific values instead of the 25 that existed in the previous year. They range from 200 B.Th.U. up to 600 B.Th.U. At the lower end of the scale, stands Nuneaton at 200 B.Th.U. and Goring at 320 B.Th.U.; while at the other end we have Corbridge, Crossgates, Brentwood, Mistley, Newmarket, and Portishead—all at 550 B.Th.U. The South Metropolitan Company has a companion in Ilkley at 560 B.Th.U.; and Lampeter is now accompanied by Croston in having 600 B.Th.U. Of the 586 declarations, 72 of them range between 200 and 440 B.Th.U., while 489 occupy the zone between 450 and 500 B.Th.U., and the remaining 25 range from 510 to 600 B.Th.U. The figures show that no less than 83·6 p.ct. of the undertakings are in the zone between 450 and 500 B.Th.U. Taking the three groups separately, the declarations are as follows: 200 B.Th.U., 1; 320, 1; 400, 16; 410, 2; 420, 6; 425, 33; 430, 6; 440, 7—making 72 declarations. In the second and more popular group, we have: 450 B.Th.U., 137; 460, 28; 465, 1; 470, 25; 475, 64; 480, 43; 490, 2; 500, 190—making 489 undertakings in this group. It will be observed that 190 undertakings are working to a declared value of 500 B.Th.U.; while 137 undertakings prefer 450 B.Th.U. and 64 undertakings the middle figure of 475 B.Th.U. Coming to the third group, the declarations are as follows: 510 B.Th.U., 3; 520, 3; 525, 4; 530, 2; 540, 3; 550, 6; 560, 2; 600, 2. In the first group the only changes, at Dec. 31 last, were that 16 undertakings, as compared with 12 at Dec. 31, 1926, were working to a declared value of 400; and 33 are now operating at 425 B.Th.U., as against 34 the year previously. In the second group, 43 are working to 480 B.Th.U., as against 41 the year before; and 190 are operating at 500 B.Th.U., which is a gain of three in the year. In the third group, there are three undertakings as against four working to 520 B.Th.U.; and the same change has been made in the number operating at 540 B.Th.U. Six undertakings as against five in 1926 have a declared value of 550, and the two small concerns working at 600 B.Th.U. compare with one in 1926.

Since the Gas Regulation Act came into force, there have been 93 changes in the declarations, only 22 being in a downward direction, while 71 have taken the upward course. The favoured group to which revised declarations have gone is the middle one—between 450 and 500 B.Th.U.

Carbonization Conference Discussions.

With this issue a supplement appears in which is concluded the report of the discussions at the recent Carbonization Conference in Birmingham.

Hotel Bookings for Cardiff.

Mr. Octavius Thomas (Gas Offices, Pentre, Rhondda), the Hon. Secretary of the Wales and Monmouthshire District Institution of Gas Engineers and Managers, writes: "To avoid unnecessary correspondence, will you please announce in your next issue that all the rooms in the Park Hotel, Royal

Hotel, and Angel Hotel, Cardiff, are booked for the Annual Meeting of the Institution of Gas Engineers in June next." Other names of hotels were given in the circular recently issued by the Secretary of the Institution (Mr. Walter T. Dunn).

"Comfortable Heat."

Much interest has been evoked by the remarks of Dr. Charles Carpenter at the recent meeting of the South Metropolitan Gas Company on the subject of the health value of flame and "comfortable heat." In our "Register of Patents" to-day is a description, taken from the patent specification, of the fire to which Dr. Carpenter was alluding. What the inventors have set out to achieve in one way has been sought in another way—through research into the radiants of gas-fires—by Radiation Ltd.

The Prime Minister and Stoke-on-Trent.

The Prime Minister is, as we all know, a man of many parts. We learn from the Chief Engineer and General Manager of the City of Stoke-on-Trent Gas Department (Mr. Alexander Mackay) that Mr. Baldwin has consented to carry out the opening function in connection with the Centralization Scheme of the City of Stoke-on-Trent Gas Department, on Friday, April 27. Mr. Baldwin has proved himself a strong believer in the centralization of the production work of public utilities, as witness his participation in the parliamentary career of the Electricity Supply Act of 1926. The Stoke-on-Trent gas supply, though on a relatively small scale, exemplifies the same thing. It also illustrates the preference of the gas industry for regional concentration as compared with centralization on the scale now being created through the instrumentality of the Central Electricity Board and the Electricity Commissioners.

Institution Chiefs and the Junior Associations.

It has been observed that the President of the Institution (Mr. H. D. Madden, M.Inst.C.E.) and the Senior Vice-President (Mr. J. Terrace, M.Inst.C.E.) have been visiting the Junior Organizations at their various meetings. The President was at the annual dinner and concert of the London and Southern District Junior Association, as reported in the "JOURNAL" last week; and we are reminded of Mr. Terrace's activities in the same respect by the notice of the annual meeting and dinner of the Manchester and District Junior Gas Association, which states that he has arranged to be present with the members on this occasion. This interest of the chiefs of the Institution in the work of the junior organizations will be a great encouragement to them, and have considerable influence.

The British Industries Fair, 1929.

The Central Executive Board of the National Gas Council have left to their Chairman (Sir David Milne-Watson) the duty of electing two representatives on the Exhibition Committee to be set up by the Society of British Gas Industries, for the purpose of organizing next year's Gas Section at the British Industries Fair, Birmingham. By inadvertence, from the resolution passed by the Society of British Gas Industries (as published on p. 681 last week), the name of the Institution of Gas Engineers was omitted. The resolution should include this amendment.

The Northumberland Clause.

The National Gas Council have been informed that the Parliamentary Authorities have no objection to the form of Northumberland Clause which has been put forward by the Council for incorporation in original Orders of electricity undertakings. The clause has the endorsement of the Electricity Commissioners.

Kingzett's "Chemical Encyclopædia."—Messrs. Baillière, Tindall, & Cox have published, at 35s., the Fourth Edition of C. T. Kingzett's "Chemical Encyclopædia," which is an epitomized digest of chemistry and its industrial applications. The new issue, which has been thoroughly revised, contains two hundred pages more than the last, and its value is greatly enhanced by the inclusion of bibliographical references.

PERSONAL.

King Amanullah of Afghanistan has conferred upon Mr. JACQUES ABADY, Mayor of the City of Westminster, the Order of Istaur-i-Dom.

Recently-elected members of the Society of Chemical Industry include Mr. FRANCIS C. BRIGGS, Engineer and General Manager to the Dudley Gas Company, and Mr. CYRIL A. MASTERMAN, of the Technical Section of the Gas Light and Coke Company, Watson House.

Estate of the value of £15,792 (with net personalty £6397) was left by Lady WOODALL, widow of Sir Corbet Woodall.

OBITUARY.

MR. PETER ROBERTSON.

It is with deep regret that we received the information last Thursday of the death, after a prolonged period of ill-health and suffering, of Mr. Peter Robertson, the Editor of the "Gas World." We mourn the loss of a journalistic colleague whose friendship has continued without a break throughout his career in the work of the gas industry.

Mr. Robertson was born in 1863 at Murthly, Perthshire, and was educated there. On leaving school in 1879, he became

junior clerk in the Edinburgh office of the "Glasgow Herald." In this position he came into touch with Mr. John Allan, who was a member of the "Herald" reporting staff in Edinburgh, and at the same time acted as Scottish correspondent of the "GAS JOURNAL." Some five years later, the "Gas World" started; it was then known as "Gas and Water." Mr. Allan, who had a financial interest in the then new venture, also became its editor; and Mr. Robertson became associated with it in a junior capacity. From the first he worked very hard, and as the years passed he accumulated considerable knowledge and experience of the gas industry and its multitudinous operations. He subsequently served under Mr. James Stewart, who migrated from Manchester (where he was associated with the "Manchester Guardian," and did district reporting for the "JOURNAL") to enter into the editorship of the "Gas World" on the death of Mr. John Allan in 1894. On the retirement, owing to ill-health, of Mr. Stewart in 1918, Mr. Robertson was appointed Editor. Unfortunately, for many years the new editor suffered from serious physical troubles; and somewhere about two years ago he met with an accident on a tramcar, which temporarily crippled him. He bore the suffering with characteristic fortitude; and though he was unable to move about with the same freedom as formerly, he did not allow his physical discomfort to interfere with his editorial duties. The development of new troubles last year necessitated an operation; but though he was confined to his house for the last few months, he carried on with the old fidelity.

To our old friend's widow, and to the staff of the journal to which he so fully devoted his career, we express our sincere sympathy.

ELECTRICITY SUPPLY MEMORANDA.

The Overcharged Domestic Consumer.

An article in the "Electrical Review" by Mr. D. J. Bolton, asks the question, "Is the Domestic Consumer Overcharged?" Seeing that uses other than lighting form such a small part of the whole of domestic consumption, the word "lighting" could in the question have well been inserted between "domestic" and "consumer." To find an answer, Mr. Bolton explores two statistical returns issued by the Electricity Commissioners which give full engineering and financial details of electricity supply in the country for the four years ending Dec. 31, 1924, for companies, and May, 1925, for municipalities. Taking the last year (1924) to which the figures apply, the author says that one of the most striking of the facts which emerge is that the lighting and domestic consumers, while they accounted for only one-fifth of the total units sold, contributed practically 50 p.ct. of the total revenue. On the other hand, the power group contributed less than half the revenue (42 p.ct. of the total) while consuming nearly 70 p.ct. of the total units sold. The remaining 10 p.ct. is taken by consumers distinguished in the return as "Traction," "Public Lighting," and "Unallocated," of which only the first represents any considerable consumption. Thus we have a small sale to the domestic consumer at a high price, and a big sale to the power consumer at a low price. In 1924, the average price to the domestic consumer was 4·2d. per unit, while the average for all other consumers worked out to 1·12d., or for power alone to 1·07d. Mr. Bolton proceeds, by as simple methods as he can command, but which are too tortuous and long to review in few lines, to examine the question on the economic basis, and not on that of policy and **expediency.** His final conclusion is that, as regards the total receipts for electricity supply in this country, the domestic consumers are contributing more, and the power consumers less, than the mean costs of their respective supplies, in so far as these can be estimated. But Mr. Bolton is careful to point out that this is by no means necessarily a condemnation of the supply authorities or even an injustice, since factors such as service rendered and general policy must also be considered. But policy and expediency have in electricity supply strained economic principles into a shapeless mass. It may be that this cannot be helped; but there it is. Mr. Roberts palliates his conclusion, probably with the view of not making bad friends, by remarking: "Indeed, ultimately the supply industry may come to be regarded in the same way as the postal service—not as something on which a profit must be made in every section of every branch, but as something which has to be run profitably as a whole, and administered in the best interests of the country in general."

Contrary Views.

In the export number of "Electrical Industries," there is an article by "Domesticus," a perusal of which suggests that the electricity industry is far from having concordant views on the subject of domestic apparatus. In this instance, it is stated that, as a natural consequence of increased demand and greater production, the prices of various appliances have tended to find a level within reach of a large number of householders. But only the other day we were reading in one of our electrical contemporaries that, owing to the continued high price of domestic gas-cookers, it was necessary, to make a business proposition of hiring, to charge a rent double that asked for a gas cooker of the same capacity. "Domesticus" declares that designs have been improved, and to-day even the newer appliances can be considered to be thoroughly reliable, and suited to the needs of people not versed in electrical matters. Glancing back at the recent writing of another electrical authority, we see how he deplores the low efficiency of the hotplates of electric cookers, and their comparatively short life. Another writer tells us how easy it is to get shocks from electrical appliances unless the metal parts are all earthed; and there is general regret that the simplicity of the gas cooker is not that of the electric cooker. Further we are told that electric fires have been developed almost beyond recognition, and very great progress has been made in producing styles which simulate the coal fire in appearance. We have looked out for those fires which have been developed almost beyond recognition. What we find is that, though casings and general appearance have been altered, the vital parts have undergone no change. As a matter of fact, years ago, a 100 p.ct. efficiency was claimed for electric fires—nothing was lost between energy input and heat output—so that nothing could improve upon that. And as to those styles "which simulate the coal fire in appearance," a householder was heard to say the other day they were pleasing enough to look upon, but for heating utility they were the biggest frauds he had ever come across. The primary purpose of a fire is to impart heat, and not merely to be looked at. People soon tire of pretenders. There is also assurance that the provision of suitable tariffs has caused considerable progress to be made in electric water heating. We are wondering what numerical term should be applied to "considerable." Again, development in this direction has been aided "considerably" by the provision of immersion heaters which can be readily fixed to existing hot-water cisterns—thus obviating much expense in altering plumbing, and in purchasing and fitting new tanks. Electrical men who do not want to bring electricity into disrepute for water heating, are chary about recommending such conversion of water-heating arrangements, owing to uncomfortable heat losses. Electricity claims very special treatment, with small input of the heating agent over long hours.

A Superfluous Committee.

The "Sale of Fittings" clause in the Electricity Supply Act, 1926, gives power to joint electricity authorities and local authorities authorized to supply electricity to sell, instal, and repair fittings. There are restrictions which debar from manufacture, and which limit the sale to consumers, or to contractors. The prices charged to consumers are not to be less than the recognized retail ones, unless to a contractor when the price is to be not less than the recognized trade one. If any question arises as to what are the recognized retail or trade prices, then it is to be determined by a Committee appointed by the Electricity Commissioners, which Committee is to be comprised of members of associations representative of local authorities and contractors and persons engaged in the business of making and selling electric fittings. The Committee has been appointed; and, according to a letter from the Chairman (Mr. D. N. Dunlop), they are now waiting for something to turn up—that is, if there is any business to be done, they are prepared to do it. We are inclined to think the Committee will have a fairly easy job, and will not be called upon to devote much time to its functions. Its greatest use, we imagine, will be to induce, by its very existence, the disputants to settle their differences privately, and not go to all the bother of referring them to the Committee for adjudication. Otherwise, we fancy the Committee will be superfluous.

The Meter Reader as Handy Man.

The electricity meter reader, according to Mr. Edward E. Hamar, writing in the "Electrical Review," should be—perhaps not a "Jack-of-all-trades," but something akin. Although the fraudulent use of electricity has only occasional exemplification, the meter reader should have sufficient knowledge to be able to detect such indiscretions. Then the meter reader should give helpful assistance to the accounts department, as electric meters have the unfortunate habit of stopping—even the best of them. Seeing that electrical appliances are not as yet without their "little troubles," a word of advice, or a moment spent on a faulty switch, plug, or fuse would often prevent an appliance being condemned without a fair trial. The word "often" was perhaps inserted accidentally. The repairs alluded to are only those which can be conveniently carried out by the aid of an ordinary pocket knife—such as the opening of plug pins, closing switch contacts, replacing fuses, and the like. If the defect is beyond the scope of the meter reader, he should hand in to the office a brief report regarding it. The meter reader can also do very useful propaganda work by leaving leaflets in the home describing electrical appliances, and containing the "usual" comments on efficiency. Training of the meter reader should commence in the meter stores, followed by experience in the meter test-room. We agree with Mr. Hamar that meter reading is an important duty, but, in our judgment, so important that the readers ought to be exempt from the recommended hindrances. It would not be difficult for them to account for the fewness of the meters read in a day, and the delays occasioned to the rental department thereby, if their special job had auxiliary small repair work attached, supplemented by the distribution of literature. We know what that all means in opening-up discussion with consumers and causing delay.

Mishaps.

When King Amanullah was contemplating with eager curiosity his visit to the City, last Wednesday, great darkness descended over the Metropolis; and electricity supply could not refrain from taking the opportunity of giving a demonstration of its capacity for misbehaviour. In the Strand area, the supply from the Charing Cross Electricity Company failed, and great was the consternation of the shopkeepers and others in the area. At the Bow Street Police Court, the Magistrate (Sir Chartres Biron) had just disposed of the applications, and was waiting for the first charge to be brought in, when the light failed. Although candles and police flash lamps were soon available, his Worship decided to leave the Bench until the light was restored. So the work of the country is delayed by the idiosyncrasies of electricity. Charing Cross Station was also plunged in darkness; but Charing Cross Hospital was fortunate in having a source of power of its own. The Baltic Exchange was also without light; and the handy candle was called upon to do duty in many of the imposing shops in the affected area. Hammersmith and Shepherd's Bush experienced a failure last week, which was attributed to a mechanical defect at the Hammersmith Borough

electricity station. At a public meeting in connection with the opening of a new Wesleyan Chapel at Blackwood the other day, the electric light collapsed. The pastor held a candle while the speakers addressed the meeting. The electricity supply failed at Camborne on two successive evenings—Friday and Saturday—last week. Shops, stores, hotels, picture shows, &c., were all plunged into darkness—on Saturday from 8.30 p.m. to 10 p.m.—causing great inconvenience and annoyance to those affected. And for these "advantages," the users of electricity are charged 1s. per unit! The propensity of electricity for mischief was further demonstrated on Wednesday morning at the Camden Town Station of the Hampstead and Highgate Railway. In ascending, the lift became lodged halfway up the shaft, and refused to move owing to an electrical defect. The passengers were imprisoned for some seven or eight minutes. According to a report which appeared in the papers last week, the Luxor-Cairo train *de luxe* was five hours late on Wednesday, owing to a fire which broke out in a first-class coach. The railway authorities cannot definitely account for the outbreak; but they give the choice of alternative causes—the fusing of the electric light system, or the dropping of a lighted match or cigarette end.

NATIONAL GAS COUNCIL.

A Meeting of the Central Executive Board of the National Gas Council took place on March 13, at 28, Grosvenor Gardens, S.W. 1—Sir David Milne-Watson in the chair.

"Northumberland" Clause.

It was reported that the Parliamentary Authorities had now stated that they had no objection to raise to the form of clause which was being put forward by the Council for insertion in the original Orders of electricity undertakings, which clause had been agreed by the Electricity Commissioners.

Municipal Housing Schemes.

It was reported that the attention of the Council had recently been called to several cases in which local authorities owning the electricity undertaking were endeavouring either (*a*) to prohibit the use of gas in such houses, or (*b*) to restrict the use of gas for particular purposes. The action which it was proposed to take to deal with the position was approved by the Board.

Rating of Gas Undertakings in Ireland.

It was reported that a Gas Company in Ireland, which was the respondent in a rating appeal, had asked for financial assistance from the Council in the event of the appeal being sustained. The request was based on the fact that the case raised a question of principle which was of great importance to all gas undertakings in the Free State, and also to those in Northern Ireland. The point of principle involved was what machinery in a gas-works in Ireland was to be regarded as forming part of tenants' capital, having regard to the provisions of the Annual Revision of Rateable Property (Ireland) Amendment Act, 1860. It was unanimously agreed to assist the Gas Company in resisting the appeal.

Proposed Gas Legislation—Irish Free State.

It was reported that the Department of Industry and Commerce of the Irish Free State had informed the Council of their intention to introduce almost immediately a Bill amending the Gas Regulation Act, 1920. It appeared to be the intention of the Government to remedy the position regarding the testing of meters. In only two cities in the Irish Free State was there an official meter testing station, and it was proposed apparently to permit—but not to compel—other local authorities throughout the country to establish testing stations, notwithstanding anything contained in the Sale of Gas Act, 1859. It was also proposed to amend the Act of 1920 so as to enable non-statutory companies to obtain Therm Orders. The Central Executive Board authorized the officers, in consultation with representatives of Irish gas undertakings affected, to take steps to secure such amendments as might be necessary in the interests of Irish gas undertakings.

Liquor Effluents Research.

A report was considered from the Committee of the Institution of Gas Engineers, dated Feb. 10, on this subject; and it was stated that the experiments that were being carried out were distinctly encouraging. It was hoped to present a further report in June next.

Ammonia Recovery.

A report was received and read from the Research Committee of the Institution of Gas Engineers with regard to this subject. A long discussion ensued, and the matter was adjourned for further consideration at the next meeting.

World Power Conference.

Mr. William Cash, F.C.A., was appointed to represent the Council on the Grand Council of the Fuel Conference of the World Power Conference.

British Industries Fair, Birmingham.

It was left to the Chairman to elect two representatives to the Exhibition Committee set up by the Society of British Gas Industries for the purpose of organizing next year's Gas Exhibit at the British Industries Fair, Birmingham.

FORTHCOMING ENGAGEMENTS.

[*Secretaries of Gas and Kindred Organizations are asked to assist in making this diary of events as complete and useful as possible by sending the earliest intimation of all meetings.*]

March 24.—Scottish Junior Gas Association (Western District).—Visit to the Kilmarnock Gas-Works.

March 28.—Southern Association of Gas Engineers and Managers.—Annual general meeting at the Hotel Cecil, Strand, W.C. 2, at 2.15.

March 29.—Midland Association of Gas Engineers and Managers.—Annual meeting in Birmingham.

March 30.—London and Southern District Junior Gas Association.—Meeting in the Westminster Technical Institute. Paper by Mr. F. C. Smith, of the Gas Light and Coke Company.

April 10.—National Gas Council.—Meeting of the Central Executive Committee.

April 10.—Federation of Gas Employers.—Meeting of the Central Committee.

April 13.—British Commercial Gas Association.—Conference of the South Western District at Ilfracombe.

April 24.—Southern Association of Gas Engineers and Managers.—Meeting at Tunbridge Wells.

May 3.—Wales and Monmouthshire District Institution of Gas Engineers and Managers.—General meeting at Tredegar (Mon.).

May 9.—British Commercial Gas Association.—Conference of the Midlands District at Redditch.

May 16-17.—Eastern Counties Gas Managers' Association.—Meeting at Bedford.

May 17.—Society of British Gas Industries.—Annual general meeting at the Hotel Cecil, W.C. 1, under the presidency of His Grace the Duke of Sutherland.

May 18.—Southern Association of Gas Engineers and Managers.—Visit to the works of the Rochester, Chatham, and Gillingham Gas Company.

May 24.—British Commercial Gas Association.—Conference of the Cornish District at Truro.

The Institution of Gas Engineers.

All meetings take place in the Council Room at 28, Grosvenor Gardens, unless otherwise stated.

March 23.—Cardiff Meeting Reception Committee, Park Hotel, Cardiff.

April 2.—Special General Meeting of the Institution for submission of Terms of Royal Charter.

April 2.—Finance Committee, Emergency Committee, and Council Meetings—all at the Institution of Electrical Engineers, Victoria Embankment.

April 3.—Gas Education Committee.

April 28.—Examination in Gas Engineering and Gas Supply held at centres in England, Wales, and Scotland.

May 1.—Refractory Materials Joint Committee.

May 7.—Sub-Committee of Gas Investigation Committee, to be held at Leeds University.

May 8.—Executive Committee of Gas Education Committee.

May 22.—Gas Investigation Committee in morning. Effluents Research Committee in afternoon.

June 12-15.—Annual General Meeting at Cardiff.

July 10.—Gas Education Committee.

Oct. 9.—Gas Education Committee.

Nov. 13.—Executive Committee of Gas Education Committee.

Dec. 11.—Executive Committee of Gas Education Committee.

THE INSTITUTION OF GAS ENGINEERS.

Council Meeting.

A Meeting of the Council was held at 28, Grosvenor Gardens, Westminster, on Monday, the 12th inst., the President, Mr. H. D. MADDEN (Cardiff), in the chair. Others present were Mr. John Terrace, Lower Sydenham (Senior Vice-President), Mr. C. S. Shapley, Leeds (Junior Vice-President), Mr. C. Rhodes Armitage (London), Mr. W. H. Bennett (Redhill), Mr. L. J. Langford (Tunbridge Wells), Mr. J. H. Canning (Newport, Mon.), Mr. P. G. G. Moon (Bournemouth), Mr. H. C. Smith (Tottenham), Mr. T. Carmichael (Portsmouth), Mr. K. K. Gibson (Liverpool), Mr. R. Robertson (Bristol)—Ordinary Members of Council; Mr. Fras. C. Briggs (Dudley, Midland Association), Mr. H. H. Gracie (Edinburgh, North British Association), Mr. T. Hardie (London, Southern Association); Mr. J. Wilkinson (Nottingham), Mr. Chas. F. Botley (Hastings), Mr. J. Ferguson Bell (Derby)—Past-Presidents; Mr. W. E. Price (Hon. Secretary), and Mr. Walter T. Dunn (Secretary).

After the minutes of the last meeting had been confirmed, two Scrutineers were appointed (Mr. T. Carmichael and Mr. L. J. Langford) for the examination of the ballot-lists for the election of the new members. They subsequently reported that the following had been duly elected:

MEMBERS.

BLACKBURN, FRANK, Chief Assistant Engineer and Manager, Gas-Works, Devonport.

BOUCHER, JAMES ALLEN, Secretary and Manager, Llynvi Valley Gas Company, Maesteg, Glam.

COE, JAMES J., Engineer and Manager, Arundel Gas Company.

COLVIN, DOUGLAS JOHN, Deputy Engineer, Corporation Gas Department, Nelson, Lancs.

CORRIGAN, JOHN, Engineer and Manager, Gas Department, Penrith Urban District Council.

CROWTHER, EDWARD, Deputy Engineer and Manager, Gas Department, Bradford.

HAWKYARD, WILLIAM, Works Superintendent, Tottenham District Light, Heat, and Power Company.

HYDE, JOHN, Assistant Engineer and Manager, Gas Department, Chesterfield.

HYSLOP, JAMES LEGGAT, Chief Technical Assistant, Gas Department, Belfast.

JONES, JOHN HADYN, Manager, Gas-Works, Dowlais.

JUBB, ARTHUR REGINALD, Engineer and Manager, Gas-Works, Melton Mowbray.

KAYE, ELLIOTT, Manager and Secretary, Elsecar, Wentworth, and Hoyland Gas Company, Yorks.

KIGHT, WILLIAM JOHN, Works Engineer and Manager, Swindon United Gas Company.

LEDINGHAM, JOHN ERNEST, Chief Assistant Engineer, Tottenham District Light, Heat, and Power Company.

LOFTHOUSE, ARTHUR GEORGE, Engineer, Manager, and Secretary, Tawe Valley Gas Company, Pontardawe.

MILLAR, WILLIAM, Engineer and Manager, Gas Department, Cookstown Urban District Council, Ireland.

MOORHOUSE, SYDNEY ASKEW, Engineer and Works Manager, Gas and Water Works, Rawmarsh, Yorks.

MURRAY, LEONARD, Engineer and Manager, Gas-Works, Blaina, Mon.

NEATH, JEPTHA, Station Engineer, Staines Works of the Gas Light and Coke Company.

PASK, ARTHUR EDWARD, Manager and Secretary, Gas-Works, Caldicot, Mon.

PEARSON, THOMAS BRYAN, Managing Director, Manager, and Secretary, Gas-Works, Pontypool.

RUST, JOSEPH F., Manager, Crindau Gas-Works, Newport, Mon.

SENSICLE, LAWRENCE HENRY, Chief Chemist, Newcastle and Gateshead Gas Company.

STEPHENSON, JULIAN, Engineer and Manager, Gas-Works, Ferndale, Glam.

TAYLOR, BERTRAM, Engineer, Manager, and Secretary, Quaker's Yard Gas and Water Company, Treharris, Glam.

WALKER, SAMUEL, Engineer and Manager, Gas Department, Porthcawl Urban District Council.

WHITE, FRANCIS C., Engineer and Manager, Blaenavon, Mon.

WILKINSON, THOMAS, Engineer and Manager, Gas Department, Abercarn (Mon.) Urban District Council.

ASSOCIATE MEMBERS.

BLYTHE, HARRY, Assistant Engineer, Gas Department, Colwyn Bay Urban District Council.

BRETTLE, OWEN STANLEY, Assistant Engineer and Manager, Gas Department, Sedgley Urban District Council.

CHIVERS, REGINALD H., Assistant Manager, Gas-Works, Abingdon.

GOODIER, HERBERT, Assistant Engineer, Gas-Works, Runcorn.

HARRISON, LOUIS WILLIAM, Engineering Assistant, Gas-Works, Barnsley.

HILL, ARTHUR DUDLEY, Works Chemist, Cavendish Street Gas-Works, Derby.

HILLIER, FREDERICK HAROLD, Works Assistant Manager, Gas-Works, Andover.

JAMIESON, ALEXANDER, Engineering Assistant, Greenbank Gas-Works, Blackburn.

JOHNS, TOM VALENTINE, Acting Manager, Gas-Works, Lowestoft.

JORDAN, WILLIAM JAMES HENRY, Chemical Assistant, East Greenwich Works of the South Metropolitan Gas Company.

LE JEUNE, EDWARD CHARLES, Representative, Gas Supply Department of the South Metropolitan Gas Company.

LEYSHON, HOWARD MORGAN EDWARD, Draughtsman, Gas Department of the Corporation of Bradford.

MORRIS, HORATIO BETHELL, Works Superintendent, Gas-Works, Loughborough.

NICHOLSON, MAURICE ROY, Assistant Works Superintendent, Hilsea Station of the Portsmouth Gas Company.

OGDEN, GEORGE, Engineering Assistant, Greenbank Gas-Works, Blackburn.

PHILLIPS, STANLEY TYSOE, Special Representative, Dealing with Architects, Civil and Consulting Engineers, Gas Light and Coke Company.

SMITH, NOEL STANLEY, Distribution and Sales Superintendent, Gas-Works, Luton.

SMITH, WILLIAM NORMAN HAZLE, Chief Assistant Engineer and Manager, Gas Department, Darwen.

STODDART, CHARLES EASTON, Shift Superintendent, Gas-Works, Oxford.

SUMMERSON, JACKSON, Assistant Chemist on Technical Staff, Gas-Works, Luton.

THOMSON, REGINALD FAIRFOUL, Engineering Assistant, Gas Department, Nottingham.

WALLER, CHARLES OLIVER, Engineer's Assistant, East Greenwich Works of the South Metropolitan Gas Company.

WHIMSTER, THOMAS CARR, Junior Assistant, Gas-Works, Waterford.

WILSON, MAURICE, Assistant Manager, Gas-Works, Waterford.

The following nomination names were approved by the Council for entering on the next ballot-list to be issued on March 16:

MEMBERS.

BATTERSBY, W. N., Engineer and Manager, Ambleside Urban District Council.

BLAKEMORE, A., Engineer and Manager, Ledbury Gas Company.

BROWN, J. T., Engineer on Staff of Messrs. Thomas Newbigging & Son, Manchester.

BUXTON, R. H., Resident Manager, Epsom Works of the Wandsworth, Wimbledon, and Epsom District Gas Company.

DALBY, L. W., Manager, Gas-Works, Wicklow.

DEAN, J. H., Manager, Rhos Gas Company, Ltd., and Ruabon Water Company.

DICKINSON, C. E., Gas and Water Engineer, Widnes Corporation.

DRIVER, M., Engineer and Manager, Silsden.

FARQUHAR, E. L., Manager, Kennoway and Largo Gas Company.

GIBBON, W., Engineer and Manager, Corporation Gas Department, Haverfordwest.

HALL, S., Gas and Water Engineer and Manager, Milford Haven.

HANDLEY, H. C., Engineer and Manager, Denton, near Manchester.

HILL, F., Manager, Gas-Works, Usk.

HOLTON, A. L., Manager, Gas-Works, Bradford Road, Manchester.

HUDSON, N., Engineer and Manager, Mirfield Gas Company.

JENKINS, H. E., Engineer and Manager, Lydney, Gloucester.

JONES, A. I., Secretary and General Manager, Holyhead and North Wales Gas and Water Corporation.

LAYCOCK, F. L., Engineer, Secretary, and Manager, Kildwick, near Keighley.

LOVE, J. R., Engineer and Manager, Okehampton Gas Company.

LOWTHER, J. H., Manager and Secretary, Bideford Gas and Coke Company.

MARSHALL, W. V., Manager, Bawtry and District Gas Company.

MARWICK, D. T., Works Manager, Hilsea Gas-Works, Portsmouth.

MILLS, A. H., Superintendent, Flathouse Gas-Works, Portsmouth.

MUNN, D. S., Engineer and Manager, Gas-Works, Renfrew.

NISBET, A. S., Engineer and Manager, Gas Department, Paisley.

PARTINGTON, N., Chief Chemist, Oldham Gas Department.

PATERSON, J. H., Resident Manager, Ludlow (Salop) Gas-Works.

REEKS, H., Engineer, Manager, and Secretary, Gas-Works, Ringwood, Hants.

ROBINSON, H. D., Engineer and Manager, Padiham Gas Department.

SHAW, L., Engineer and Manager, Gas-Works, Rothwell, Leeds.

SINCLAIR, C. L., Resident Engineer, Mitcham Works of the Wandsworth, Wimbledon, and Epsom District Gas Company.

STANLEY, O. F., Manager, Cudworth Gas and Water Department, Yorks.

VERNON, H., Engineer, Manager, and Secretary, Gas-Works, Nantwich.

VERSEY, H. W., Manager and Secretary, Dawlish Gas and Coke Company.

WRIGHT, P., Superintendent, Belgrave Gate Gas-Works, Leicester.

ASSOCIATE MEMBERS.

ASPINALL, R. L., Assistant Engineer and Manager, Barry.

BATTERSBY, T. C., Assistant Engineer, St. Albans Gas Company.

BELL, B. J., District Superintendent, Cardiff Gas Light and Coke Company.

BELL, JAMES, Chief Technical Assistant, Gas-Works, Stirling.

BILLINGHAM, A. D., Special Representative of Gas Light and Coke Company, for Large Carcassing Central Heating.

BRADLEY, M. P., Technical Assistant, Halifax Corporation Gas-Works.

BRITNELL, J. V., Technical Assistant to Engineer and Manager, Uxbridge Gas-Works.

BROADBRIDGE, H. G., Technical Assistant, Leamington Priors Gas Company.

Chapman, J. H., Chief Draughtsman, the Swansea Gas Light Company.
Connolly, A. W., Chief Chemist of the Portsmouth Gas Company.
Coole, S. D., Technical Assistant, Cleethorpes Gas Company.
Cunliffe, J. A., Superintendent, Morrison Works of the Swansea Gas Light Company.
Duff, G. B., B.Sc., Works Chemist, Wandsworth, Wimbledon, and Epsom District Gas Company.
Dunn, E. V., Assistant Engineer and Manager, Wells Gas Light Company.
Duthie, G. D., Assistant Engineer and Manager, Hyde Gas Company.
Evetts, W. A., Assistant Manager, Watford Gas-Works.
Ewing, W., Assistant Engineer and Manager, Falkirk Gas Department.
Felton, C. B., Chief Assistant at Crindau Station, Newport (Mon.) Gas Company.
Ferns, J. B., Assistant Engineer and Manager, Gas Department, Hamilton.
Gabbatt, W. M., Assistant Gas and Water Engineer and Manager, Barrow-in-Furness Corporation.
Gardiner, J. G., Chief Chemist, Swansea Gas Light Company.
Garrud, T. V., Industrial Representative (Inspector), Gas Light and Coke Company.
Gibson, T. W., Second Assistant Engineer, East Greenwich Works of the South Metropolitan Gas Company.
Gray, P., Engineer (Class B), Tar Products Works, Beckton Station of the Gas Light and Coke Company.
Gringer, C. A., Assistant Engineer and Manager, Exmouth Gas Company.
Hailstone, H. J., Chemical Works Superintendent and Chief Chemist, Corporation of Rochdale Gas Department.
Haynes, C. G., Assistant Superintendent, Stapleton Road Gas Works, Bristol.
Hazell, H. D., Distribution Engineer, Newport (Mon.) Gas Company.
Hill, L. C., Assistant Distribution Superintendent, Bournemouth Gas and Water Company.
Kelly, V., Assistant Engineer, Gas-Works, Singapore.
Kimmins, L. G., Technical Assistant, Gas-Works, Tonbridge.
Knowles, H. B., Chief Assistant Engineer and Manager, Gas-Works, Lancaster.
Knowles, H. H., Assistant Engineer, Gas-Works, Buxton.
Lockhead, G. R., B.Sc., General Assistant, Gas-Works, Paisley.
McNair, J., Assistant Works Engineer, Hoboken (Antwerp) Gas-Works of Imperial Continental Gas Association.
Metcalf, C. E., Works Superintendent, Gillingham Gas-Works.
Millard, W., Works Manager and Assistant Engineer, Bridlington Gas Company.
Murphy, F., Works Superintendent, Barnsley Gas Company.
Rew, R. F., Engineer to Devon Gas Association.
Richmond, J. H., Assistant Resident Engineer, York Gas Company.
Riley, J., Jnr., Manager, Rossendale Union Gas Company.
Roberts, J., Assistant Gas Manager, Gas-Works, Bingley.
Rudd, T., Chief Chemist, Exeter Gaslight and Coke Company.
Scobie, J., Engineering Assistant, Gas-Works, Dunfermline.
Scott, J. A., B.Sc., Chemist and Works Assistant, Gas-Works, Norwich.
Scurr, S. W., Assistant Gas and Water Engineer, Clacton.
Shadbolt, W. R. S., Works Chemist, Grays and Tilbury Gas Company.
Simpson, H., Technical Assistant, Gosport District Gas Company.
Smith, N. S., Assistant to Editor, "Gas Journal."
Thomas, H. R., Chief Assistant to the Cambridge University and Town Gas Light Company.
Thompson, J. P., Deputy Gas Engineer to the Colne Corporation.
Thompson, N. B., Assistant Gas Engineer and Manager, Skipton.
Triggs, J. E., Manager, Penistone and District Gas Company.
Watson, L. H. Technical Works Assistant, Foleshill Works, Coventry Corporation Gas Department.
Williamson, C. H., Second Assistant at East Greenwich Station of the South Metropolitan Gas Company.
Worthington, T., Engineer and Manager, Gas-Works, Halesworth.
Young, A. D., Chief Engineering Assistant, Burnley Corporation Gas Department.
Young, J. E., Works Superintendent, Grantham Gas-Works.

Associate.

Jacobs, J. R. H., Managing Director, Southampton Gas Company.

Transference from Associate Member to Member.

Clarke, Bernard, Engineer, Manager, and Secretary, Stamford Gas Company.
Howes, Frederick Norman, Deputy Gas Engineer and Manager, Burnley.
Kenshole, William T., Chief Assistant Engineer. Lea Bridge District Gas Company.
Marsden, Arthur, Chief Chemist, Bristol Gas Company.
Rioch, J. Hunter, Assistant Gas Engineer, Stoke-on-Trent Corporation Gas Department.
Shenton, G. H., Engineer and Manager, Rainford Gas Company.
Stapleton, Frank W., a Senior Assistant Engineer, Purification Department, Beckton Station of Gas Light and Coke Company.

Students.

Bale, Christopher S. C., Articled Pupil to Mr. C. M. Croft, Gas-Works, Wandsworth.
Falkner, William J. J., Assistant Manager, Romsey Gas Light and Coke Company.
Farror, Robert M., Articled Pupil to Mr. C. M. Croft, Gas-Works, Wandsworth.
Garner, Leonard F., Junior Chemist, Luton Gas Company.
Harvery, E. Pellow, Assistant Works Manager and late Articled Pupil to Mr. C. M. Croft, Gas-Works, Wandsworth.
Johns, W. H. T., Engineering Pupil, Cardiff Gas Light and Coke Company.
Love, George R., Assistant, Okehampton Gas Company.
Oldham, W., Gas-Works, Ellesmere Port.

The Charter.

The Council then proceeded to consider the final draft of the Petition, Charter, and By-Laws for placing before the corporate members of the Institution at the meeting to be held at the Institution of Electrical Engineers at 11 a.m. on Monday, April 2.

It was agreed that the name under which the Chartered Institution should be known should be "The Institution of Gas Engineers." The Secretary was directed to issue to every corporate member of the Institution a copy of the Petition, Charter, and By-Laws recommended by the Council for their adoption at that meeting.

The Council were reminded by Mr. Terrace that after the Charter had been approved and granted by the Privy Council, it would be necessary for the Education Scheme to be revised by the Gas Education Committee, for the approval of the Council, in order that the provisions relating to the Education Scheme referred to in the Royal Charter might be duly observed.

Reference was made to the visit to Staines on the afternoon of the 2nd of April for the purpose of viewing the waterless gasholder now in course of erection there for the Gas Light and Coke Company, and also the new apparatus for the drying of gas installed by Messrs. W. C. Holmes & Co., of Huddersfield. It is intended that members desiring to make the visit should leave Grosvenor Gardens by motor coaches at 2.15 p.m. After the inspection, the visitors are kindly invited to tea by the Governor and Court of Directors of the Gas Light and Coke Company. Arrangements have been made for the motor coaches to return to London, arriving at Grosvenor Gardens at about 6 o'clock.

General Matters.

During the course of the proceedings, various matters which had come under the consideration of the Emergency Committee were reported, including a report from Mr. C. S. Shapley, of Leeds, with reference to the gasholder inquiry held at Manchester. Mr. Shapley was cordially thanked for the action he had taken on behalf of the Institution.

Mr. Chas. F. Botley presented the report of the Effluents Committee to date, in which he said that, at the suggestion of Mr. Bloor and others of the Yorkshire District, the Committee should hold a special meeting for the purpose of considering the proposal that the Institution should take up questions relating to the subject of sulphate of ammonia manufacture, in order that gas undertakings throughout the country might adopt measures that would ensure the profitable sale of sulphate.

Mr. Shapley reported that he had received a cheque for the sum of £150 from the Yorkshire Commercial Section of the Manchester District Institution of Gas Engineers, for handing to the Institution. It was to be employed for the purpose of carrying out research work on ammonia, or utilized in some way, agreed to by the Committee, that would most advantageously achieve the objects referred to above.

A cordial vote of thanks was passed to the Yorkshire Commercial Section of the Manchester District Institution of Gas Engineers, for their generosity.

In regard to the forthcoming meeting of the Institution at Cardiff, it was mentioned that a large number of members had already given their names as intending to be present at the meeting and that some of the hotels had already reserved all their rooms.

It is therefore essential that members who have not already booked their rooms should do so without further delay, especially as on June 12, the day of the opening of the meeting, H.R.H. The Prince of Wales will be in Cardiff to unveil the Welsh National Memorial.

A meeting of the Council will be held at the Park Hotel, Cardiff, at 5 p.m. on June 11, and the President will invite all the members of the Council to take dinner with him there at the close of the meeting. For this invitation an expression of the Council's thanks was conveyed to him.

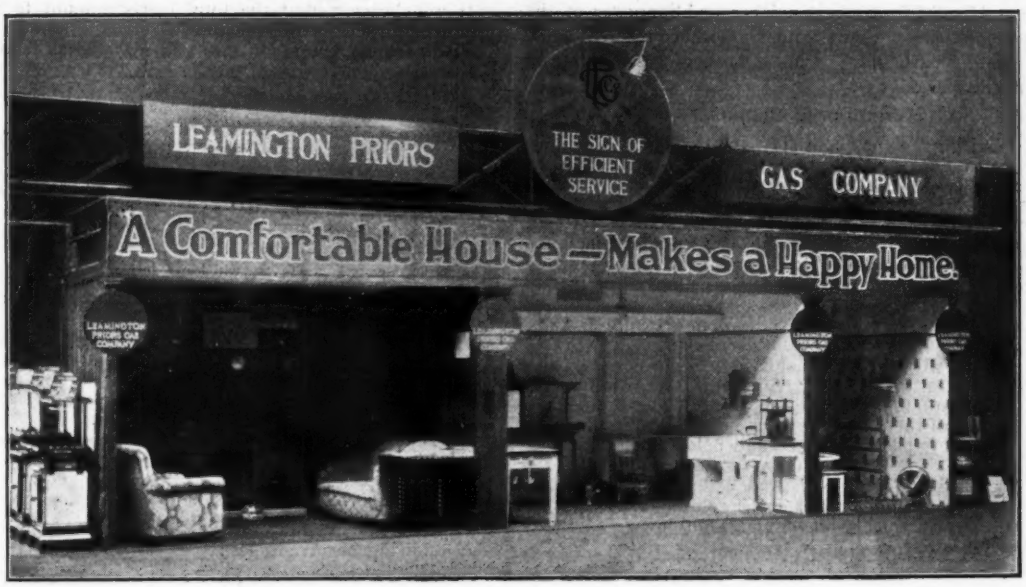
It was agreed that the Council of the Institution should invite the President to luncheon on Wednesday, June 13.

It was reported that the following had been nominated for election as Ordinary Members of the Council at the Annual General Meeting in June next:

H. E. Bloor, B.Sc., B.Eng., Engineer, Manager, and Secretary, York Gas Company.
W. M. Carr, General Manager, Stretford District Gas Board.
G. S. Frith, J.P., Engineer, Manager, and Secretary, Runcorn Gas Company.
Frank P. Tarratt, Chief Engineer, Newcastle and Gateshead Gas Company.
W. W. Townsend, Engineer and General Manager, Colchester Gas Company.

INDUSTRIAL EXHIBITION AT LEAMINGTON.

Attractive Gas Display.

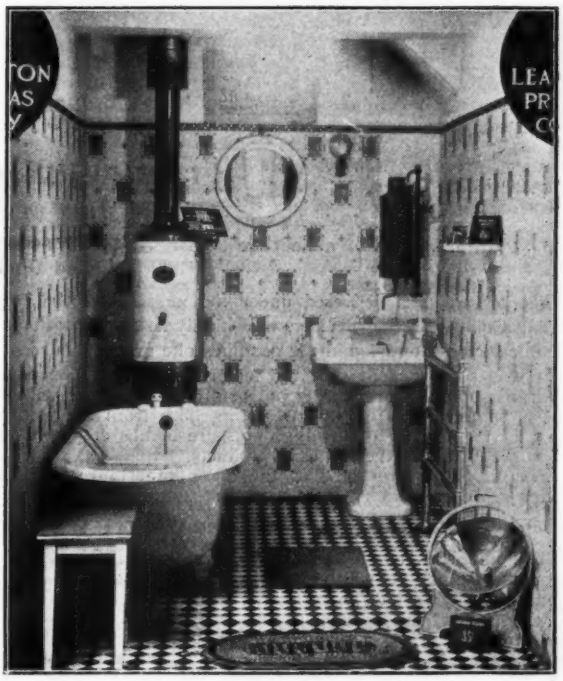


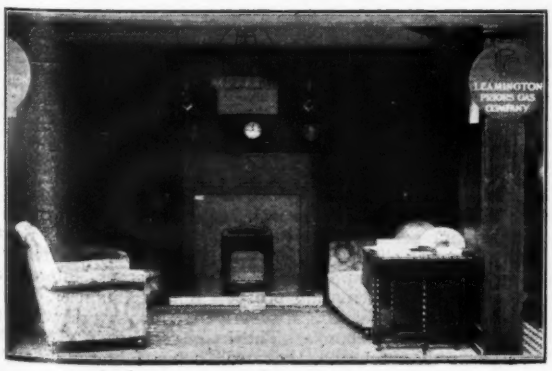
Last month an effective gas display was staged by the Leamington Priors Gas Company at a ten-day industrial exhibition of domestic appliances held in the Winter Halls, Leamington Spa. The stand took the form of a modern house, with bathroom, kitchen, and lounge fitted with all the latest labour-saving gas appliances.

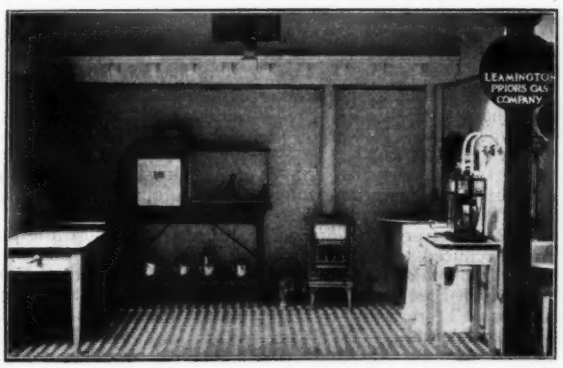
In the bathroom was a geyser finished in white enamel; and the water to the lavatory bowl was heated by a Richmond "Hot-Point" geyser. The bathroom itself was heated by a "Garba" bowl reflector heater and a nickel-plated gas-heated towel rail. The kitchen was furnished with a Cannon "Corna" wash-boiler in white enamel finish; and a "Nautilus" coke boiler with white tiled sides was exhibited. Flavel's latest "eye-level" cooker occupied a prominent position. The hot water for the sink was heated by a Ewart "Brilliant" geyser; and a Keith gas iron was on view.

The lounge was panelled in Oregon pine, and was fitted with a Flavel gas fire. Lighting was by gas candle brackets and silk shaded lights operated by pneumatic switch. Beyond the lounge was a display of Flavel's gas cookers and fires.

All the signs were illuminated by Sugg's directive lights fitted with distant control device.







Midland Association of Gas Engineers and Managers.—The annual meeting of the Association will take place in the Grand Hotel, Birmingham, on Thursday, March 29, at 2.30. Mr. W. G. S. Cranmer, of Willenhall, will deliver his Presidential Address, and Mr. J. Poulson, of Oldbury, will contribute a paper on "Continuous Vertical Retort Practice at Oldbury."

STEAMING HORIZONTAL RETORTS.

A One Shift Per Day Works.

From Mr. H. Pickford, the Engineer and Manager of the Farnworth and Kearsley Gas Company, we have received some highly interesting particulars of his method of gas-making on one 8-hour shift per day.

METHOD OF WORKING.

The carbonizing plant consists of Drakes horizontals arranged in four tiers; the retorts being of ⏢ section, 23 in. by 16 in. by 20 ft. long. Ascension pipes are fitted at one end of the retorts only. Stoking is by Jenkins De Brouwer machine; and when the retorts are fully charged they hold about 15½ cwt. each. Charging is carried out once every 24 hours, and the gas-making period consists of 12 hours' carbonizing and 12 hours' steaming. The coal carbonized consists of a mixture of 50 p.c. slack, 30 p.c. nuts, and 20 p.c. screened coal, and steam is admitted to the retort at a minimum pressure of 5 lbs. per sq. in. at the end opposite to the ascension pipe.

As mentioned, only one 8-hour shift is worked per day; this being from 8.30 a.m. to 4.30 p.m. Sufficient coke is left on the floor to suffice until the following morning. The firemen attend to the filling of the producers after the day shift is finished. The gas produced is passed into a small holder, where mixing takes place, and thence to a larger one, which supplies the district. Mr. Pickford informs us that he experiences no difficulty in maintaining a standard calorific value of 480 B.Th.U., and that the recording calorimeter chart on town gas rarely shows a greater variation than 10 B.Th.U.

A typical gas analysis is as follows:

	P.Ct.
CO_2	4·4
O_2	0·5
C_nH_m	2·1
CO	13·9
CH_4	21·67
H_2	50·93
N_2 (diff.)	6·53

It will be seen that the total inerts amount to 11·43 p.c. [Air is admitted for revivification of oxide *in situ*.]

The working results for 1926 and 1927 are as follows:

Year.	Gas. C.Ft. per Ton.	Gas. Cal. Value. B.Th.U. per C.Ft.	Gas. Therms per Ton.	Coke Sold. Cwt.	Tar. Galls.
1926	15,997	449*	71·8	8·06	9·50
1927	15,416	486	74·9	6·86	11·08

*Calorific value restrictions were withdrawn during the coal stoppage of 1926.

ADVANTAGES AND DISADVANTAGES.

The advantages of this method of working, as stated by Mr. Pickford, are as follows:

(1) Saving of stoker's wages for one shift.
(2) Lower heats required for 24-hour charges; consequently reduced wear and tear on settings.
(3) Increase in gas production per ton of coal carbonized.
(4) Little carbon deposit on retorts.
(5) No stopped pipes.
(6) No naphthalene trouble.

Against the foregoing advantages, however, have to be set the following disadvantages:

(1) More carbonizing plant in use, to the extent of 20 p.c.
(2) Saleable coke reduced by about 2 cwt.
(3) Liquor cannot be maintained at 10-oz. strength (it is reduced to 6 or 7 oz.).
(4) Extra cost of steaming. As only breeze and recovered coke are used, the extra cost is not very material at present prices.

HYDROGENATION OF COAL.

THE BERGIUS PROCESS.

[Impressions of a Lecture by Dr. A. CRAWFORD, Officer-in-Charge of Coal Survey of Northumberland and Durham, March 1.]

The lecture was delivered under the auspices of the Armstrong College Mining Society, who kindly issued invitations to technical men interested in the gas and coke oven industries.

It was soon evident that the lecturer was fully conversant with his subject. The matter put before his audience, with the aid of lantern, was highly interesting both from the point of view of the novelty of the high-pressure bombs employed and from the nature of the resulting products.

The following are some of the more important particulars jotted down or memorized by our correspondent.

MATERIALS EMPLOYED.

The materials employed are powdered coal, with a certain proportion of oil vehicle (boiling-point above 230° C.), a small quantity of catalyst ("Lux Masse" or hydrated ferric oxide), and a current of hydrogen. The coal and oil are mixed by pug mill into a paste, and fed at high pressure into the bomb. In fully equipped plants the process is continuous and the reactions take place in three stages; there being three bombs in series. The pressure of reaction employed is about 200 atmospheres (2950 lbs. per sq. in.) and the temperature 370° to 470° C.

Smaller bombs are heated in a bath of molten lead, and rotated. Large bombs are heated by a current of hot nitrogen gas which passes through an annular chamber, also at 200 atmospheres pressure, surrounding the inner reaction bomb. The largest bomb working in Germany has an output of about 80 tons of oil per day. The walls of the bomb, which is made of steel, are at least 5 in. thick. The risk of leakage is great, and special precautions have to be taken against explosions and fire.

The finished products are passed to a vessel where the pressure is reduced to about 60 atmospheres before separation of the crude oil takes place. The oil contains a quantity of very finely divided solid matter which is not susceptible to filtering, and has to be removed by centrifuging; the loss thus entailed being considerable.

As an example, the product first obtained contained 3·7 p.ct. of water, 86·4 p.ct. of oil and 9·9 p.ct. of finely-divided solids. The loss on centrifuging was 9 p.ct.

The hydrogen used ought to be as pure as possible—say, over 95 p.ct. The usual method of preparing it is from water gas. As three to four volumes of water gas are required for one volume of hydrogen, it cannot cost, into holder, less than 1s. per 1000 c.ft. (or (say) 4d. a therm) under the most favourable conditions.

Attempts to recover or regenerate hydrogen obtained from the separation vessel have not proved successful as yet.

The lecturer indicated that good coal was required for the process. Mine sweepings or "dant," rich in fusain, are not suitable. The coal should be high in volatile content and contain less than 5 p.ct. of moisture for good results.

YIELDS.

The yield of different oils from a ton of good coal was given in gallons, thus: Motor spirit 33, Diesel oil 44, lubricating oil 13·2, fuel oil 17·6, residue 7·7—a total of 115½ gallons. Compared with the process of carbonization the yields were given as follows:

—	High-Temperature Carbonization.	Low-Temperature Carbonization.	Bergius Process.
	P.Ct	P.Ct.	P.Ct.
Coke	60	68	14
Gas	26	14	30·5
Tar	5·5	10	48·5
Motor spirit	1·5	2	22
Loss	7	6	7
	100	100	122*

*The additional 22 is due to the hydrogen added.

As regards the composition of the oil product, 75·7 p.ct. was neutral oil, 12 p.ct. phenolic, 3·5 p.ct. bases. In chemical constitution they were as follows: Benzene series 7·5 p.ct., paraffins 37 p.ct., and naphthenes 27 p.ct.

ECONOMICS.

At 8d. per gallon of motor spirit and 4d. per gallon of oil, the total revenue per ton of coal is not more than 55s. The cost of the hydrogen is about 25s., so there remains only 30s. to pay for the coal, labour, maintenance, capital charges, interest, and profit—not a very tempting prospect for the financier.

Maintenance is very high, seeing that 1000 hours' working is the usual life of a bomb. The hydrogen has a deteriorating decarbonizing action on the steel, which, however, may be overcome by the use of liners impervious to hydrogen.

It was pointed out that in Germany the process is at work on brown coal, which is readily mined and costs only 3s. a ton.

Prospects of success in this country seem very remote as yet.

A very interesting matter was mentioned by Dr. Crawford in this most instructive lecture, and that was the changing of a non-caking coal into a caking one by a modification of the Bergius process. No details, however, were furnished.

MIDLAND JUNIOR GAS ASSOCIATION

A Meeting of the Midland Junior Gas Association was held at the Council House, Birmingham, on March 15—Mr. H. R. HEMS (President) in the chair.

NOTES ON CONDENSATION.

By S. J. D. WILLIAMS, of Stourbridge.

[EXTRACT.]

Coal gas usually leaves the retorts at a temperature in the neighbourhood of 450 Fahr. (in the case of steamed vertical retorts). Coming in contact with the cool walls of the offtake pipes the gas quickly attains, with the higher boiling constituents, a supersaturated condition, and very small globules of tar are thus formed which partly condense, and flow away to the syphons and storage well. By the time the gas enters the condensers, it has fallen in temperature to about 160° Fahr. (or, in the case of horizontal retorts, some 30° Fahr. lower).

With the more general adoption of steamed vertical retorts, it very soon became evident that the existing condensing plants were either inadequate or were taxed to a very much greater extent than was formerly the case. A much larger cooling surface is given to the offtake pipe of the horizontal than to that of the vertical retort for the same gas yield; but, more important, some of the steam used in steaming the verticals passes through the retort unchanged, and its latent heat prevents the temperature falling to the same extent. In both these cases the gas is nearly saturated with water vapour when it enters the condensers; and the amount of heat required to be removed from steamed vertical gas at 160° Fahr. is more than double that from horizontal gas at 130° Fahr. This difference is due almost wholly to the latent heat made sensible by the water vapour in turning to a liquid, as may be shown by the following calculation:

1000 c.ft. of gas at 60° Fahr. will carry when saturated	at 160° Fahr., 2·20 galls. of water as vapour 0·08 gall.	at 130° Fahr., 0·82 gall. of water as vapour 0·08 gall.
Amount of water as vapour at 60° Fahr.		
Amount of water condensed out in cooling this gas to 60° Fahr.	2·12 galls.	0·74 ,,
B.Th.U. removed in condensing this water vapour	21·2 × 976 = 20,700	7·4 × 976 = 7200
Sensible heat removed in cooling the gas to 60° Fahr., B.Th.U.	2,000	1400
B.Th.U. removed in condensing the tar	350	300
Total heat to be removed in cooling the gas to 60° Fahr., B.Th.U.	23,050	8900

In other words, gas saturated with water vapour at 160° Fahr. requires about two-and-a-half times as much heat to be removed as at 130° Fahr. Were there no condensates to be removed, the ratio would have been in proportion to the fall in temperature in each case—namely, 100 to 70.

Troubles likely to occur from deposits before the condensers are confined chiefly to pitch and ammonium chloride. With regard to the former, with our "W-D" verticals pitch is removed from the tar pots on top of the beds every 48 hours, and is kept at a minimum by circulating tar, which is sprayed into the foul gas uptake some 6 ft. above the pots. On one occasion only have we had trouble from pitch in the foul main, and that was when testing a sample of unsuitable coal. When the horizontal retorts are in use, pitch stoppages in the butterfly valves frequently occur. Deposits of ammonium chloride are usually cleared by circulating ammoniacal liquor. When possible, it is desirable occasionally to reverse the flow of gas through the condensers, to remove any condensates that may settle.

The condenser at the Stourbridge Works is of the vertical cylindrical water-tube type, having a capacity of 1½ million c.ft. per day on a basis of 3 sq. ft. per 1000 per day. The water used to cool this machine is pumped from a borehole, the temperature of which is 52° Fahr. and does not vary above 2° F. either way during the whole year. Unfortunately the water is contaminated with some organic material, and a kind of slimy fungus grows on the inside of the tubes. It was chiefly owing to this that the previous condenser, having small-bore water tubes which choked up daily, had to be scrapped. The present condenser certainly does, more than any other type, lend itself to easy cleaning of the tubes, and in our case these tubes are kept clear by plunging each one with a circular steel wire brush once a week. In doing this operation two wire brushes are used, one on each end of a length of chain which passes over a pulley mounted on a light portable stand kept upright by pushing the bottom end down one of the tubes. Thus, while one brush goes downwards, the other rises; the pulley stand being moved after every half-dozen tubes have been cleared. Once a month the water inlet is shut off, and the whole of the water and accumulated fungus flushed away.

NAPHTHALENE.

The methods usually adopted to prevent solid deposits of naphthalene on the district are either to wash the gas with a solvent, and so reduce the amount in the gas to a negligible quantity, or to inject into the gas a liquid hydrocarbon the vapour tension of which is approximately that of naphthalene, so that when any deposit does occur it does so in solution, and so finds its way to the syphons. Another method which appears to give good results at some works is that of shock cooling the gas at the condensers; and though this may to some extent rob the gas of some of its lighter constituents, this improves the quality and quantity of the tar, and in this way is of national advantage.

It has been the practice at the Stourbridge Works to wash the gas with tar oil (specific gravity 0·928) having an absorbing power of about 18 p.ct. of its own weight of naphthalene. Most of this oil is carried forward with the gas, and is eventually pumped out of the syphons with the naphthalene in solution. The washer consists of a 6 ft. cubical cast-iron box inside which is fixed a 16-in. diameter elbow to one of the sideplates through which the inlet gas flows. This elbow is turned downwards, and on the bottom is fixed a large sheet-iron disc turned down at the edge, which is serrated. The washing oil is run into this box through a seal from an overhead feed tank.

The conditions inside the holders vary according to whether the temperature of the air is above or below the dew-point of the gas when it enters. On a very cold day the inside might be compared with the atmosphere on a foggy November day; water condensing and dripping off the roof or running down the sides of the holder. This will tend to reduce the dew-point of the gas. On the other hand, on a hot summer day the plates on top of the holder become very hot, the temperature of the gas is raised, and water is picked up from the water tank, so raising the dew-point. The water so absorbed will eventually be condensed out in the mains and services. With the primary object of preventing corrosion of the plates and framework inside the holders, we put gas oil inside at intervals of six months to give a film about $\frac{1}{16}$ in. thick; about 250 galls. being required for a 100 ft. diameter holder. This is an effective insulator in preventing water being absorbed by the gas, and at the same time will trap any water that may drip from the roof or down the sides. Before oil was put into the holders, we found that on one which had only a short time previously been painted with red oxide paint, corrosion was taking place. This was shown by the characteristic colouring of prussian blue on the edges of the sideplates. Since the introduction of the oil inside, no further signs of corrosion have been observed. It is most important that holders with oil inside them should not blow, otherwise the oil from inside is quickly transferred to the outside. In badly-designed cups and grips, which habitually blow during the cupping, oil will work through.

Reduction of the temperature at the condensers to as low a figure as can conveniently be worked (it is our custom to work as nearly as possible to 60° Fahr.), will materially reduce the amount of water to be pumped out of the mains, provided that the washing plant is in a cool and shady place, and oiling of the inside of the holders is practised. Since we have been able to keep a stricter watch over the outlet condenser temperature, through the fixing of a recording thermometer, we have found that the amount of water required to be pumped out of the syphons has been considerably reduced.

All the condensates pumped out of the syphons of the district are collected in a tank mounted on a motor lorry, and brought into the works. The amount of water pumped out is booked; and it has been possible practically to double the interval between the pumpings.

By the prevention of condensation of water vapour in the mains, services, and meters of the distribution system, internal corrosion is almost entirely prevented; and the total elimination of condensates of any kind goes a long way towards providing an uninterrupted supply of gas. Consumers have nowadays become more and more dependent upon our main commodity, so that any interruption is a much greater hardship than was formerly the case. This the gas industry should do its best to prevent.

Certain gas undertakings are now putting in apparatus for partially drying the gas in addition to the extraction of naphthalene; and I venture to predict that within the next decade few works will not have some such apparatus.

VOTE OF THANKS.

Mr. CAUDWELL (Shrewsbury), moved a vote of thanks; and this was seconded by Mr. A. R. MYHILL (Nechells), who pointed out that the whole question of condensation was bound up with that of the scrubbing effect on the tar in the condensing plant. He thought that shock cooling had come to stay.

Mr. J. H. GEE (Nechells) congratulated Mr. Williams upon the low naphthalene content at Stourbridge. It occurred to him that the condensing area was rather low for the worst conditions.

Mr. C. F. TOOBY (Coventry), speaking of the presence of organic fungus, alluded to by the author, said he was informed that the use of a small quantity of copper sulphate was effective for dealing with that nuisance. The importance of keeping the condenser tubes clean could hardly be exaggerated, especially where canal and similar water was used. Neglect seriously affected efficiency.

WALES AND MONMOUTHSHIRE JUNIOR GAS ASSOCIATION.

A Meeting of the Association took place at Cardiff on Feb. 4—Mr. T. V. BLAKE, of Cardiff, presiding.

MECHANICAL OPERATIONS ON A GAS-WORKS.

By C. S. THANE, of Newport.

[EXTRACT.]

WORKING AND MAINTENANCE OF BOILERS.

Every fireman should endeavour to be economical in the use of fuel. His main object must, of course, be to keep the pressure gauge pointer on the mark of the highest allowable boiler pressure; and he should try to do this without blowing-off at the safety valves, which wastes steam. The burning of the fuel on the grate is caused by the pull of the chimney or by the regulation of the steam blowers or fan, should such be fitted. Due attention to the controlling of the fan, steam blower valve, or stack damper will conserve fuel. The thickness of the fire is another great point in fuel economy. As a general rule a fire of 5 to 8 in. in thickness spread evenly over the grate will give the best steaming results, with ordinary good draught. Care should be taken to see there are no bare places. A golden rule for firing is "little and often." By this method we have the benefit of a bright and hot fire. The furnace door should be kept open only for the shortest possible time. The admission of cold air through the furnace door while the boiler is steaming is very injurious, causing quick contraction of the plates. Riveted seams will consequently leak.

A blow-off cock is always fitted to the boiler for emptying, cleaning, &c. It is advisable to use the blow-off cock at least once a day, and blow down about 1 to 3 in. of water, according to the size of the boiler, for the purpose of getting rid of mud and sediment. This promotes circulation.

When emptying a boiler, it is advisable not to draw the fire, but to allow it to burn out. Water should not be blown out, but should be allowed to cool in the boiler. The steam may, if necessary, be blown away by the safety valve. If there is insufficient time to let the boiler cool off in this manner, it may be blown down; but care must be taken to see that the fire is out, and on no consideration must cold water be admitted to cool the boiler, or serious damage may result.

Great attention must be given to the opening-out of a boiler which has been allowed to cool off as advised; strict care being exercised before removing a manhole door to ascertain whether air has been admitted into the boiler. This can easily be done by opening one of the water test cocks or water gauge drain cocks. This will destroy the vacuum created inside the boiler by the condensing of steam and vapour.

If this precaution is not taken, there is grave risk of serious injury to the person who tries to remove the manhole door, which, when slacked-off, would be forced into the boiler with tremendous power, perhaps taking the attendant with it, or forcing him to the opening, and holding him there until the vacuum had been destroyed.

All boilers have two gauge glass fittings, or one set of gauge fittings and one set of test cocks. The correct level of water is from one-third to half way up the gauge glass, or between the two test cocks. The level should be tested by these cocks, and the bottom cock should show water and the top cock dry steam. In the event of no test cocks being fitted, the two gauge glass fittings should be tested carefully each day by the following procedure.

The steam cock at the top should be closed, and the bottom drain cock opened. Water should then blow out freely. The bottom cock should then be closed and the top cock opened, when a good blow of dry steam should be emitted. This simple procedure will ensure that the cocks are clear to the boiler. The matter is of some importance, as it is possible that either of the cocks may be choked, leading to a false indication of the water level in the boiler, which, if not noted in time, might cause the failure of the boiler, or possibly serious injury.

Shortness of water in a boiler is one of the greatest fears of the engineer, as one cannot conjecture what might happen. It can generally be avoided by paying attention to the above points, as other causes—such as failure of pump or injector—would be known to the fireman or attendant. In the event of the water being low, I would advise the following procedure: The damper should be closed and firing ceased until it is assured that the water level is safe. Should the water supply have failed, and be dangerously low, close the damper and place wet ashes on the fire, to reduce the heat, before drawing the fire, and ease the safety valve.

Should the furnace crowns become red hot through a shortness of water, there is every possibility of their collapsing. All boilers should have fitted to the furnace crowns or the top of the fireboxes a fusible plug, which is a brass fitting with a lead centre. Should the boiler become short of water, the lead centre will melt, causing the steam to rush out and extinguish the fire. It is not wise to place too much reliance on this in the event of known shortness of water.

Safety valves should be eased now and again, to ensure that they are free. This can easily be done by raising the safety valve lever. As stated previously, the violent blowing of the safety valve is not good firing. It is wasting steam and fuel. Should the steam get too high by the sudden shutting-down of engine or plant, the damper may be closed and the furnace door opened (the damper being closed will prevent the admission of too much cold air to the boiler furnace plates or tubes).

Care should be taken to avoid overloading a safety valve. An explosion may occur. Even if an explosion does not occur, the person who tampers with the safety valve in this manner is punishable by law.

Priming of a boiler may occur, and is an occurrence to avoid. I will endeavour to describe it and its causes. By priming, one means the water of the boiler rising with the steam, the cause of which may be:

(*a*) The water level being too high.
(*b*) Steaming beyond its capacity.
(*c*) Very dirty internally.
(*d*) Oil with water.

To prevent priming, the makers fit a long internal steam pipe with slots or small holes in it, so that the steam may be taken from a wide area. In the event of a boiler priming, all drain cocks should be opened immediately. The water level should be reduced by blowing down very carefully, firing slowly and continually, and keeping a full head of steam.

When two or more boilers are coupled together, care must be taken when opening the stop valve (to put into service a spare boiler) to see that the pressure is equal, or nearly so, for there is always a certain amount of water lying in the steam services, in spite of steam traps and drains. Therefore it may be necessary to crack the stop valve for some minutes before opening out, for water, unlike steam, is not elastic. It will be seen, therefore, that there is a risk of fracturing the steam service by opening out too quickly.

LIFTING GEAR.

Chains, after being in use for some time, get tired. It is necessary to anneal the chains (say) every twelve months. The best method of effecting this is to heat them slowly and evenly to a blood-red temperature, afterwards allowing them to cool off slowly and carefully. Any attempt to anneal a chain in an ordinary smith's fire is unsatisfactory; but an open coke fire is suitable if the fire is allowed to die out with the chain on it. Another method claimed to be good for preserving chains is to lay them aside for a long period, entirely free from suspension—that is, each link should lie on the ground free from the weight of other links. Of course, this method entails the use of a spare set of chains.

WIRE ROPES.

The life of wire ropes varies according to the uses to which they are put. Pulleys or drums should be as large in diameter as possible. Small drums cause undue bending of the individual strands, and consequent breakage.

As there are many strands in a wire rope all woven together, protection from rusting is necessary, for they become brittle, and the rope will part under load. In the case of wires in suspension outside, attention may be paid to cleaning, inspecting, or lubricating, and yet the wire may fail under load, owing to penetration of damp at the base, which may have caused internal rusting. Therefore it becomes absolutely necessary at times to cut the wire through as low as possible, and inspect it.

Provision should always be made for taking up on a wire by having it longer than actually needed. The full load should never be put on a wire rope which has not two or more turns on the winding drum. However seldom lifting gear be used, it should be tested at least once a year, and be kept clean and well lubricated.

VOTES OF THANKS.

Mr. H. WILLIAMS (Cardiff) proposed a vote of thanks to Mr. Thane; and this was seconded by Mr. A. J. CRUISE (Cardiff).

An interesting discussion followed, contributed to by the CHAIRMAN and Messrs. J. HISLOP, H. D. HAZELL, A. H. DYER, W. H. T. JOHNS, K. JONES, and R. T. MILLS.

On the proposition of Mr. C. B. FELTON (Newport, Mon.), seconded by Mr. K. JONES (Newport, Mon.), the Directors and management of the Cardiff Gas Light and Coke Company were thanked for providing the facilities for the meeting.

Society of Chemical Industry.—On Friday next Mr. Alfred A. King will read a paper on "Ultra-Violet Radiation in Industry," at a meeting of the Chemical Engineering Group of the Society to be held in the rooms of the Chemical Society, Burlington House, at 8 o'clock. On April 20 a joint meeting of the Group with the Birmingham Section of the Society of Chemical Industry, will take place in Birmingham. A visit is being arranged to the Industrial Research Laboratories of the Birmingham Gas Department. A paper will be read by Dr. C. M. Walter, on "The Heat Treatment of Ferrous Metals."

INTERNATIONAL COMMISSION ON ILLUMINATION.

In September next an important meeting of the International Illumination Commission, which was formed in 1900, and includes both the gas and the electrical interests, is to be held in America. The objects of the Commission are the study of all subjects bearing on Illumination and its cognate sciences, and the establishment of international agreements on illumination matters.

There are at present National Illumination Committees in Austria, Belgium, France, Germany, Great Britain, Holland, Italy, Japan, Switzerland, and the United States.

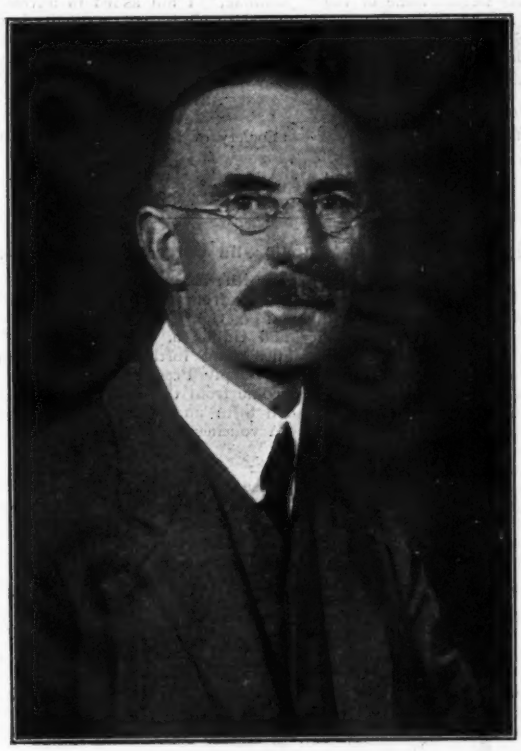
For the first time in the history of the Commission, a British President has been elected; Mr. C. C. Paterson, O.B.E., Director of the Research Laboratories of the General Electric Company, Wembley, having been unanimously voted President at the Bellagio meeting in September, 1927.

In 1903 Mr. Paterson was appointed to take charge of the photometric work at the National Physical Laboratory, and was responsible to the Director of the Laboratory for the building-up of this Department, and for the direction of the Research and test work in it from its beginning. This included the design and equipment of the photometric buildings, the development of the special precision methods of measurement connected with the work, and the evaluation of the necessary fundamental units, such as the establishment of the national unit of candle-power which formed, with the units of America and France, the basis of the international unit. Shortly after the outbreak of war he was responsible with Dr. J. W. T. Walsh for the inception and development of the Paterson-Walsh electrical height finder, which gave automatically a record of the heights of aircraft, for use in anti-aircraft gunnery. It was in 1919 that Mr. Paterson joined the General Electric Company.

Mr. Paterson has many contacts with engineering and science outside the immediate work of his laboratories. He has been Vice-President of the Institution of Electrical Engineers and of the Institute of Physics, and is on the Councils of many research and engineering associations. In the sphere of illumination, he is Chairman of the Illumination Committee of the Department of Scientific and Industrial Research, with which the National Physical Laboratory collaborates closely. For fifteen years he has acted as Secretary of the International Commission on Illumination.

The Commission has already established an international standard of light, and the following subjects are now being dealt with, to which will be added from time to time other important matters associated with the study and practice of Illumination engineering which are ripe for international consideration: Vocabulary, definitions and symbols, factory and school lighting, automobile headlights, heterochromatic photometry, street lighting, signal glasses, diffusing materials, photometric test plates, photometric accuracy, &c., light flux distribution, daylight illumination, cinema lighting, fundamental research on glare, and colorimetry.

The British National Illumination Committee, which is closely associated with the Sectional Illumination Committee of the British Engineering Standards Association (the membership being practically identical), and which will be responsible for nominating delegates to represent the British viewpoint and British interests, is anxious to secure adequate representation at these meetings. It is hoped that the delegates will include representatives of the Government Departments, the municipalities, the National Physical Laboratory, the electrical industry, the gas industry, and the principal associations interested in illumination matters; and an appeal is made to those bodies to provide the representation desired. Mr. Buckley, of the National Physical Laboratory, Teddington, who is the Secretary of the British National Illumination Committee, will gladly furnish full particulars.



MR. C. C. PATERSON, O.B.E.

REPAIR WORK ON GASHOLDERS.

A Committee of the "A.G.A." to Prepare Recommendations.

The Executive Board of the American Gas Association has created a Special Committee to prepare recommendations as to practice for the conduct of repair work on gasholders. The Committee is as follows:

J. B. Klumpp (Vice-President, the United Gas Improvement Company, Philadelphia, and Past-President of the American Gas Association), Chairman; H. W. Alrich (Consolidated Gas Company, of New York), J. H. Braine (the Brooklyn Union Gas Company), L. B. Eichengreen (the United Gas Improvement Company, Philadelphia), Alfred Hurlburt (Equitable Gas Company, Pittsburgh), A. I. Snyder (Detroit City Gas Company), and W. G. Rudd (the Peoples Gas Light and Coke Company, Chicago).

Gas Plant at the Crewe Locomotive Works.—In a paper dealing with the reorganization of the Crewe Locomotive Works, read by Captain H. P. M. Beames at a meeting of the Institution of Mechanical Engineers on March 16, the author mentioned that the capacity of the gas plant for manufacturing gas for the illumination of town and London, Midland, and Scottish Railway Company property (1,239,000 c.ft. per day) being taxed to its utmost, it became necessary to rebuild and enlarge the station. This has been carried out by the erection of a new mechanically-operated installation of horizontal retorts, with water gas plant, waste-heat boiler, condensing tower, wet and dry purification plant, and the provision of a 1,000,000 c.ft. holder. The sixty-four hand-fired gas producers have been replaced by six mechanical gas machines.

MACARTHUR CONCRETE PILES FOR HOLDERS.

The MacArthur system of moulded-in-place piles has for the past ten years been successfully used in connection with gasholder construction in the United States. From a description by D. McG. Newton (President of the MacArthur Concrete Pile Corporation) which has been published in the "Gas Age-Record," it appears that there are three types of piles used, according to the needs of particular cases. One of these is known as the compressed concrete pedestal pile, because, by the method of forming it, a pile with an enlarged base is left in position. Frequently conditions occur where a fair stratum, insufficient to support an ordinary pile, lies between poor upper and lower strata; and here the pedestal pile is employed. Another important field for this type of pile exists where it is necessary to hold down, as well as to hold up, a structure. It is, the writer says, always possible to do this by the deadweight of the foundations; but, apart from the expense of concrete or other material involved, there is the added weight that has to be held up. The matter of holding down is of importance in the case of high, but comparatively light, structures, where wind pressure increases the load to be carried on one side while tending to lift the other. The introduction of the waterless gasholder, with its great saving in weight on the foundations, has also brought the question of holding down much to the fore. A great number of such gasholders rest on pedestal piles, reinforced with a single 1¼-in. square rod, extending the full length of the pile. The pedestal naturally gives greatly increased resistance to lifting; and it has been found, by numerous lifting tests, that the rod invariably ruptures without any movement of the pile.

CORRESPONDENCE.

[We are not responsible for opinions expressed by Correspondents.]

British Industries Fair (Birmingham)—Gas Section for 1929.

SIR,—With reference to the resolution passed by the Council of the Society of British Gas Industries on March 7, which appeared in last week's issue of the "JOURNAL," I am asked to advise you that among the bodies to be invited to elect two representatives on the Society's Exhibition Committee the Institution of Gas Engineers should have been included. This by some oversight was omitted, though it was, of course, the intention to include the Institution.

ARTHUR L. GRIFFITH,
Secretary,
Society of British Gas Industries.

56, *Victoria Street,*
Westminster, London, S.W. 1,
March 19, 1928.

Institution Education Scheme and Correspondence Classes.

SIR,—At their meeting on Feb. 14, the Executive of the Gas Education Committee received applications from the Principal on behalf of over thirty students of the Halifax Gas College for the necessary recommendations to the City and Guilds of London Institute for them to sit as external candidates at the forthcoming examinations in Gas-Works Practice and Gas Supply Practice (Minor Courses). These applications purported to come from the individual candidate, but were all typed in a common form and sent in together, with the candidate's name typed in. A voucher from the Principal is appended to each.

The following is one such letter:

DEAR MR. HOLE,—I have pleasure in forwarding the enclosed applications from students of the Gas College for permission to sit for the forthcoming examinations of the City and Guilds of London Institute in Gas Supply or Gas-Works Practice.

I have added a note certifying that each of these students has complied with the regulation that he must have commenced a course prior to the new regulations, which I trust will cover this point.

Before accepting students for these courses, we now require a letter from a responsible official of the undertaking where they are employed, certifying the non-existence of approved courses which they can attend; and with the greater insistence of your Committee upon higher standards in the ancillary subjects, we are also insisting that students should attend local technical or evening continuation classes to standards which will enable us to train them satisfactorily for these examinations.

It would perhaps save time if any forms which you require completed by them could be sent direct to them. Needless to say, I shall be pleased to give you any further information you consider necessary in connection with the work they have done.

I trust these formal applications will be in order.

A. COE, Principal.

The Gas College,
3, Thrum Hall Lane, Halifax,
Jan. 31, 1928.

Copy of Letter from Mr. Hole to Mr. Coe.

DEAR MR. COE,—I beg to acknowledge receipt of yours of the 31st ult., enclosing 16 applications from students to sit for this year's examinations in Gas-Works Practice, and of 17 similar applications to sit for examination in Gas Supply Practice. These will be brought before the Executive of the Gas Education Committee at their meeting on the 14th inst.

It occurs to me that it would assist the Committee in coming to a decision, if you could inform them which of the students have studied ancillary subjects at approved technical schools, what subjects they have taken, and to what standard. Will you please let me have this information within the next few days? Thanks.

Feb. 2, 1928.

Copy of Letter from Mr. Coe to Mr. Hole.

DEAR SIR,—I have pleasure in forwarding the enclosed particulars of the various students who have made application, through me, to sit for the examinations of the City and Guilds of London Institute this year.

All these students, with the exception of the one noted, made inquiries at their local technical schools in 1926 as to the possibility of classes being arranged for these particular examinations, and were informed that none would be available. Their applications, therefore, fall under the exemption rule of students who commenced private tuition (by correspondence in these cases).

I would like to suggest that there are several of these students quite up to the standard required for the Ordinary Examination (External) of the Institution, and to say that I have no doubt they will be quite willing to be transferred to these if you consider it desirable. Possibly you will take this matter up with them.

I have still several students for these examinations who commenced work before the new reguatlons were made; but owing to the fact that they are engaged upon small works where considerable demands are made upon their spare time, they cannot complete their work in time to sit this year. I trust that these students can be brought forward under the same rule next year.

I should also like to have your guidance with regard to shift workers—for example, a stoker who aspires to become a carbonizing foreman, and would like to take the examination in Gas-Works Practice, but who, owing to the time of his work, could not possibly attend a local technical or other evening school if one was available. How do they stand? I take it that this section of the scheme is designed specifically to raise the standard of men of this class.

I trust that these applications are now in order, and that they may be favourably considered by your Committee.

Feb. 10, 1928.

In order to make clear the position taken by the Executive in this matter, and as a guidance to candidates in the future, I am asked to send for publication the enclosed copies of correspondence which has ensued:

Copy of Reply to Mr. Coe.

DEAR SIR,—Your letters of the 31st ult. and the 10th inst., together with the collective applications enclosed therewith, were considered by the Executive of the Gas Education Committee on the 14th inst. In reply thereto I was asked to say:

1. The Gas Education Committee can only receive such applications on behalf of their students from the principals of approved technical schools.
2. The Halifax Gas College has not received the approval of the Gas Education Committee.
3. Inasmuch as the Gas College has not been approved by them, the Gas Education Committee are not prepared to accept the voucher appended to each of the applications forwarded.
4. In the cases of isolated students, applications for exemptions or recommendations must be made by the student personally.
5. Such application must be made to the District Education Committee within whose area the candidate resides.
6. The Committee is not prepared in any case to recognize tuition obtained by correspondence in science subjects as a qualification for entrance to any examination under the Institution's Education Scheme.
7. Most of the candidates might have attended technical schools in their own neighbourhoods for personal instruction in ancillary subjects.
8. In future all students who find any difficulty in obtaining the required instruction in science subjects will be required to communicate with the District Education Committee, when special arrangements will be made to meet the need wherever possible.
9. The whole of the applications have been referred to the District Committees for consideration.

Feb. 29, 1928.

Copy of Letter to the Candidates.

DEAR SIR,—The Executive of the Gas Education Committee, at their meeting on the 14th inst., had under consideration an application from the Principal of the Halifax Gas College on your behalf, for the necessary recommendation for admittance to the City and Guilds of London Institute Examinations in Gas-Works Practice and Gas Supply Practice, in May next.

I was desired to inform you that this application should have been made personally by you to the District Education Committee in whose area you reside, and has now been referred to them for consideration.

I am also to point out that the Committee does not recognize tuition by correspondence in science subjects as any qualification for entrance to the examinations held under the Education Scheme of the Institution. Even in those centres where instruction in the full Minor Course is not available, tuition in the requisite ancillary subjects may, in most cases, be obtained at approved technical schools; and the Committee must insist on this being done in the future.

In the few remaining cases where such instruction is not within reasonable reach, the District Education Committee should be approached for the provision of special facilities.

The Gas Education Committee is desirous of being as helpful as possible, and therefore in this year of transition will not draw too hard and fast a line; but it must be clearly understood that, in the future, observance of the foregoing rules will be rigidly insisted upon.

As soon as the report of your District Committee has been received and considered by the Gas Education Committee, I will communicate with you again.

March 2, 1928.

Copy of Letter to District Secretaries.

DEAR SIR,—At their meeting on Feb. 14, the Executive of the Gas Education Committee had under consideration the enclosed applications from the Principal on behalf of students of the Halifax Gas College.

I enclose herewith a copy of the reply which I have sent, and also a copy of the letter which I am forwarding to each of the candidates. These will indicate the position the Committee has taken in the matter.

In referring these applications to your District Committee for consideration, I am to point out that, while the Gas Education Committee is not prepared to approve tuition by correspondence, it is recognized that probably many of these candidates have been misguided, and that considerable hardship might be inflicted upon them by a too rigid insistence upon that principle in this year of transition. Will

you therefore bring these applications before your Committee at the earliest possible moment, with this indication from the Gas Education Committee that they are prepared to give favourable consideration to such recommendations for exceptional treatment as they may decide to make. Will you kindly deal with the matter as one of immediate urgency?

I am sorry to press you so, but it was agreed with the City and Guilds of London Institute last summer that all such recommendations should be be forwarded to them by Feb. 28, and we are therefore already behind time.

March 2, 1928.

The applications were further considered by the Executive on the 13th inst.; and in each case the recommendations of the District Committees were adopted.

Thanking you in anticipation for the courtesy of allowing us the use of your columns for this purpose.

WALTER HOLE,
Organizing Secretary, Institution Education Scheme.

Cliff Haven,
Redcliffe Park,
St. Marychurch, Torquay,
March 16, 1928.

REGISTER OF PATENTS.

Lubrication of Dry Gas Meters.—No. 282,964.

SIMPSON, S., of Exmouth.

No. 30,736; Dec. 4, 1926.

According to this invention, there is provided in the upper or valve chamber of the meter an oil storage tank whence oil is delivered to a distributing reservoir. The storage tank is provided with means whereby it may be filled without escape of gas; such means conveniently comprising a filling tube extending to the exterior of the meter and having the lower part arranged within a liquid or oil seal.

Oil is supplied from the storage tank to the reservoir by means of a pump operated from a moving part of the meter mechanism, such as one of the flag wire arms or the index spindle of the index mechanism; and a constant head is maintained in the reservoir by means of a weir or overflow fitting delivering the surplus oil to the storage tank.

The oil is delivered from the reservoir by channels, conduits, or tubes, which at the delivery end are provided with means to control the flow, such as wool plugs, orifices controlled by valves, or the like. Further, the moving parts of the meter mechanism to which it is desired to distribute oil may be provided in such manner as to facilitate the flow of oil to the various surfaces to be lubricated. Thus, in the case of the tangent pin, tangent crank pin, and shaft, the several parts may be provided with grooves or may be formed with flanges for the purpose of confining the oil and directing it by way of oil holes or passages to the surfaces to be lubricated.

Gas-Heated Boilers.—No. 284,862.

POTTERTON, A. B. & T. F. C., of Balham, S.W. 12.

No. 3801; Feb. 10, 1927.

This invention relates to sectional boilers for low-pressure hot water heating installations, and has for its main objects the production of a compact boiler of relatively large output, simplicity of construction and facility in assembling the sections and in varying the capacity of the boiler by increasing or diminishing the number of sections, and accessibility of the heating flues for cleanir ; purposes.

Fig. 1 is an end elevation; fig. 2 a front elevation; and fig. 3 a vertical section on line 3—3 of fig. 2.

The upper half A of the boiler is formed with a re-entrant angle A^1 on its under side, which seats upon a corresponding salient B^1 on the upper side of the lower half B of the boiler, which in turn rests upon a substantial compound base and condensation tray C within which the gas burners D are mounted. Thus there is no possibility of any relative movement, except sideways, and such sideways movement is prevented by the external water pipe connection —for example, pipe E—which establishes communication between the waterways of the upper and lower halves of the boiler,

The burners D are removable; and each is provided with a lighting jet and a separate lighting door G. Each half of the boiler is preferably built up of an uneven number of sections, so that there is an even number of heating flues; and the burners D are so arranged that the burner serves a pair of flues.

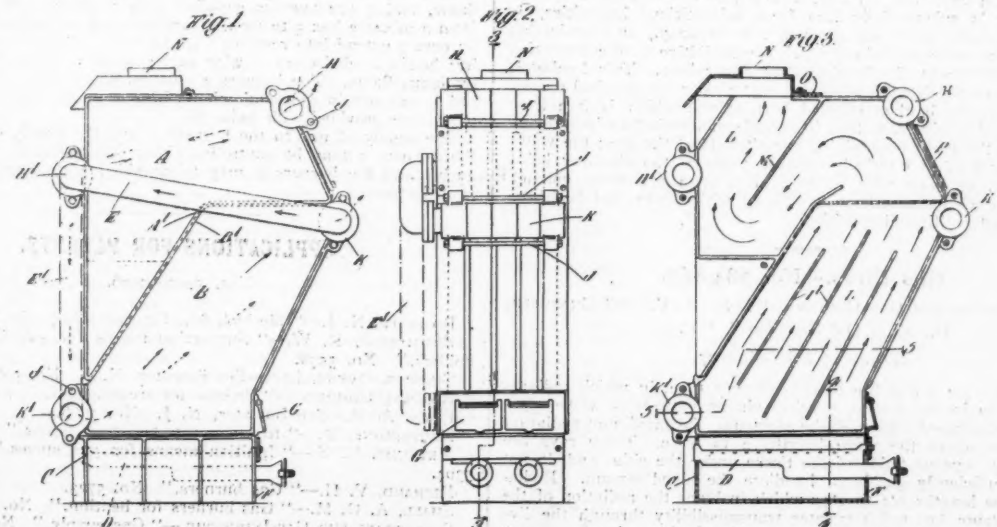
The upper part A of the boiler comprises two tubular headers H, H^1 front and rear; each of these headers consisting of a plurality of sections preferably uneven in number, and the sections of the two headers being connected with each other by waterways. The several sections are bolted together by bolts J passing through lugs on the outer sectional headers. Similarly, the lower part of the boiler comprises sectional headers K and K^1. Adjacent faces of the sectional headers are machined to form a tight joint when the sections are bolted together, or pointing rings may be interposed between the sections.

Adjacent waterways are spaced apart to form the heating flues L, and the walls of the waterways are preferably provided with longitudinal ribs I^1 which project into the flues L and fulfil the double purpose of absorbing heat from the flue gases and ensuring the uniform distribution of the flue gases from front to rear of the flues. The ribs upon opposing walls are preferably staggered. The flues in the upper half of the boiler are preferably provided with one or more transverse baffles, such as M, so that the products of combustion, after passing rectilinearly upwards along the flues of the lower half B of the boiler, change direction twice, as indicated by the arrows in fig. 3, in traversing the flues of the upper half on their way to the discharge header or chimney flue N.

When the boiler is used as a cold-top boiler, the return pipe of the circulation system is connected with the top header H, which is also usually the front header, of the upper half of the boiler, whence the water passes through the waterways to the lower or rear header H^1 of the upper half, and thence through an external connecting pipe indicated in dotted lines at E^1 to the lower or rear header K^1 of the lower half of the boiler, and therefrom upwardly through the waterways and the upper or front header K of the lower half of the boiler to the outward or supply pipe of the circulating system; the direction of flow of the water through the two parts of the boiler being as indicated by the dotted arrows in fig. 1.

To adapt the boiler for use as a cold-bottom boiler, the only change necessary is in the external pipe connections of the two halves of the boiler. In lieu of the pipe connections shown in dotted lines at E^1 between the two rear headers, the rear header H^1 of the upper half is connected by an external pipe E with the front header of the lower half of the boiler. In this case the bottom rear header K^1 is the cold or inlet end and the upper header H of the upper half of the boiler becomes the supply or outlet end, and the circulation of water within the boiler is as shown by the full line arrows in fig. 1.

Access to the heating flues in the rear part of the upper half of the boiler—that is, in rear of the transverse baffle M—is obtained through a flue door O in the top plate, and access to the flues in front of the baffle M and also to the flues of the lower half of the boiler is obtained through a door P in the front plate of the upper half of the boiler; the arrangement being such that the soot dislodged from the flues of the upper half of the boiler can be raked over into the flues of the lower half and through them discharged into the base tray C.



LOW-PRESSURE BOILER.—THOS. POTTERTON (HEATING ENGINEERS), LTD.

Geysers.—No. 284,544.

EWART, S., of Euston Road, N.W. 1.

No. 18,202; July 8, 1927.

With a well-known type of geyser base, there is a tendency for the water of condensation which runs down the inner surface of the combustion chamber of the heater to the gutter to creep under the lower edge of the heater and upwardly between the low wall or rim on the base and set up corrosion.

The object of this invention is to obviate the described disadvantage; and to this end the patentee substitutes for the supporting ledge or platform, a series of ribs, lugs, or the equivalent, within the gutter upon which the lower edge of the heater body is designed to bear. Thereby the creeping of the water of condensation up the outside of the heater is avoided.

The lugs are preferably three in number and equidistant around the base, and advantageously extend from the low wall or rim of the base radially partly across the gutter, and may be notched to receive the lower edge of the heater or geyser body; or they may extend right across the gutter in the form of bridges.

Adsorption Processes.—No. 284,758.

HOLLINGS, H., PEXTON, S., and VOSS, W. A., all of The Gas Light and Coke Company, Horseferry Road, S.W. 1.

No. 27,427; Nov. 2, 1926.

No. 2264; Jan. 26, 1927.

This invention is for improvements in and relating to the adsorption treatment of fluids—such, for example, as gases—for the purification thereof or separation therefrom of valuable components. It particularly refers to the treatment of hydrocarbon-bearing gases, such as coal gas, for the recovery of benzole and the like.

As is now well known, in the treatment of fluids with adsorbents such as activated carbon, a progressive decrease takes place in the adsorptive capacity of the adsorbent; and a stage is ultimately attained when, principally for economic reasons, the material is either discarded as unfit for its original use or is submitted to a special treatment, which such is still applicable, known as "reactivation," for restoring the adsorptive capacity.

The inventors' researches have established that there are, broadly speaking, two classes of impurities which cause the aforesaid depreciation in the capacity of adsorbents—first, those impurities which may be conveniently described as "adventitious impurities," such as metallic carbonyls and foreign substances mechanically carried in the gas or vapour current; and, secondly, certain impurities which are naturally components of the gas or vapour itself and which may, therefore, be conveniently designated as "natural impurities." The latter are frequently termed "gum-forming" or "gumming" constituents; and they are apparently compounds which comparatively readily undergo polymerization or oxidation—or possibly both of these changes—on contact with an adsorbent surface such as is presented by adsorbent charcoal. While these natural impurities likewise cause a progressive depreciation in the efficiency of adsorbents, their effect is strikingly different from that produced by the adventitious impurities.

The present invention has particular reference to the adsorption treatment of fluids, for the purification thereof or separation of valuable constituents therefrom, which contain such "gumming" components; and especially fluids of the type of coal gas which contain carbon monoxide or generators thereof—that is to say, gases which under the conditions of the adsorption process can give rise to carbon monoxide. The invention provides a means of more effectively and economically treating such fluids by adsorption, and of so doing with the additional economic advantage of greatly prolonging the life of the adsorbent.

The specification sets out very fully how this is achieved, and quantitative examples are given; but the broad lines of the invention will be clear from the following extracts from the claims.

The process comprises submitting the fluid to the action of the adsorbent in a condition, on introduction into the adsorption sphere, in which it is substantially free from adventitious impurities, in particular metallic carbonyls such as iron carbonyl, and conducting the treatment under conditions which are inhibitive of the formation of such impurities *in situ* in the adsorption sphere. This freeing is effected by filtering through adsorbent material or by chemical means. The main process is then effected in a sphere which is free from material, particularly iron, that is capable of forming carbonyl compounds with the carbon-containing constituents of the gas; the walls, partitions, and other interiorly exposed parts of the chamber being composed of, or lined with, copper, zinc, or a refractory enamel. Regeneration of the adsorbent is effected with steam that has been purified of adventitious impurities.

Gas Fires.—No. 284,867.

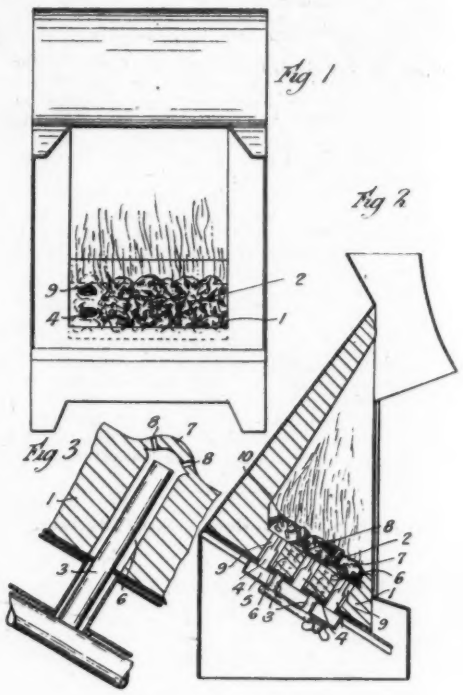
SOUTH METROPOLITAN GAS COMPANY, EVANS, E. V., and CHANDLER, D., all of Old Kent Road, S.E. 15.

No. 4267; Feb. 18, 1927.

Radiation from a gas fire of the ordinary type, in which radiants are heated to incandescence, consists almost entirely of waves confined to the infra-red region of the spectrum, the maximum radiation occurring at about the wave lengths 2 to 2·5 μ. These rays are absorbed by aqueous fluids of the tissue under the skin, and do not penetrate sufficiently deeply to irradiate the blood stream. Radiation of wave lengths 0·4 to 1·4μ which includes the radiation of the visible spectrum has much greater transmissibility through the living tissue. Rays of still greater wave length, beyond 1·4μ, cannot penetrate into the blood stream. A source of radiation emitting rays which can penetrate into the blood stream must therefore comprise a source emitting some portion at least of the spectral region 0·4 to 1·4μ, preferably the red spectral region, for which the penetrating power into the skin is relatively large—for instance, a brightly burning coal fire with its flickering luminous jets of flame.

A gas fire, as usually constructed, comprises a fireclay structure or structures, termed radiants, which are heated to a state of incandescence by non-luminous burners of the bunsen type, and which radiate energy in the infra-red region of the spectrum; but, while the maximum thermal efficiency for purposes of heating a room by gas is obtained by the use of such flames which heat refractory bodies to incandescence, it will be seen from the facts stated above that it is desirable to warm the human body by means of the radiation from *luminous flames*. A gas fire for heating both an enclosure and people therein should therefore comprise means for producing luminous flames, and also means for producing non-luminous or bunsen flames, by which the radiants may be raised to incandescence. Either or both these types of flames should be operable as desired.

Thus a gas fire according to the present invention comprises means for producing luminous and lambent flames, means for producing



Metro "Comfortable Heat."

non-luminous flames, and fireclay radiants which are disposed in such a manner as to produce as nearly as possible the effect of an ordinary coal fire. Luminous flames ascend from a bed of incandescent fireclay material disposed in a suitable manner upon a hearth made of refractory material. The burner or burners employed to provide the luminous flame may be an integral part of the bunsen burner or separate units, depending upon the particular structure and design of the fire.

Fig. 1 is a front elevation; fig. 2 a sectional end elevation; and fig. 3 a detail. 1 is a bed of refractory material on which are placed fireclay radiants 2 resembling pieces of coal. 3 are burners supplied with gas unadmixed with air, to produce a luminous and lambent flame, and 4 are burners supplied with a mixture of gas and air from a mixture box 5 to form a non-luminous or bunsen flame. The burners 3 extend into recesses 6 in the bed 1 provided with distributing heads or deflectors 7 with perforations 8 which distribute the luminous flame. The burners 4 pass through holes 9 formed in the bed 1, and are in communication with the interior of the radiants 2 which are provided with holes 10.

The supply of gas to the burners 3 and the supply of mixture to the burners 4 may be controlled either independently or simultaneously; and the burners 4 may be provided with distributing heads or deflectors.

APPLICATIONS FOR PATENTS.

Nos. 5202—5996.

BOWATER, N. J.—"Method, &c., for quenching coke." No. 5966.
BROADHEAD, R. W.—"Supporting means for spirally-guided gasholders." No. 5538.
CHAMBER OVENS, LTD.—See Bowater, N. J. No. 5966.
KOPPERS COMPANY.—"Process for treating gas." No. 5352.
LYMN, A. H.—See Bowater, N. J. No. 5966.
MACFARLANE, R.—"Incandescent gas street lamps." No. 5419.
METHUDY, C. E.—"Ignition means for gas stoves." Nos. 5302, 5304.
RICHARD, V. H.—"Gas burners." No. 5723.
SMALL, A. G. M.—"Gas burners for heating." No. 5685.
STUDIENGES FUR GAS-INDUSTRIE.—"Gas supply." No. 5854.
WINBY, L. P.—"Gas generators." No. 5965.

PARLIAMENTARY INTELLIGENCE.

HOUSE OF LORDS.

Progress of Bills.

Barnet District Gas and Water Bill: Brought from the Commons; read the first time; and referred to the Examiners.

Littlehampton Gas Order: Referred to the Special Orders Committee.

Gosport and District Gas Order: Approved.

HOUSE OF COMMONS.

Progress of Bills.

Barnet District Gas and Water Bill: As amended, considered; read the third time, and passed.

Coventry Corporation Bill: Reported, with amendments.

South Metropolitan Gas Bill: Reported, with amendments.

Littlehampton Gas Order: Copy presented.

Gosport District, Ilkley Urban District Council, Newcastle-upon-Tyne and Gateshead, and Southend-on-Sea and District Gas Orders: Approved.

Gas Fund Accounts.

The Gas Fund Accounts for the year ended March 31, 1927, were presented on Thursday of last week.

Extracting Oil from Coal.

Mr. D. GRENFELL asked the Secretary for Mines, on March 13, how much progress was being made in extracting oil from coal; and how much was being done to encourage experiments in low-temperature carbonization and other methods.

Commodore KING replied that there were now five plants, each designed for a throughput of 100 tons a day or more, in working order in this country, representing at least five different processes for the low-temperature carbonization of coal. There were some six or eight further systems represented by plants with a capacity of 10 tons a day or over. These included the type developed at His Majesty's Fuel Research Station, of which a 100-ton a day plant was being erected by the Gas Light and Coke Company. Large commercial plants of several of the other systems were stated to be under erection. The results obtained from these plants during the next few years should show how far, and under what conditions, each type was likely to be a commercial success.

SOUTH METROPOLITAN GAS COMPANY'S BILL.

HOUSING ESTATES AND UNDEDICATED STREETS.

House of Commons Committee.—Tuesday, March 13.

(*Before Sir* ARTHUR SHIRLEY BENN (*Chairman*), *Mr.* WELLOCK, *Major* GEORGE DAVIES, *and Sir* FRANK NELSON.)

The objects of the Bill are to extend the limits of supply, to raise new capital, and for other purposes.

Mr. H. P. MCMILLAN, K.C., Mr. ROWAND HARKER, K.C., and Mr. A. MOON appeared for the promoters; the Hon. EVAN CHARTERIS, K.C., represented the only opponent—the Woolwich Borough Council.

Mr. MCMILLAN said the South Metropolitan Gas Company was one of the three great Metropolitan Gas Companies, and was a Company whose admirable record of public service had more than once received recognition at the hands of Parliamentary Committees. It was started in 1834, and now supplied gas in an area which included ten Metropolitan Boroughs, and portions of Kent and Surrey. The Company employed 8000 workpeople; and one of the most interesting features of its constitution was that both the shareholders and the employees were partners in a statutory co-partnership scheme which made them financially interested in keeping the cost of gas at the lowest possible price. The price charged for gas by the Company was generally lower than that charged by the other two big London undertakings; and at the present time it was 8¾d. per therm. The authorized capital of the Company was £8,000,000, of which £7,100,000 had been issued. The loan capital raised by way of debenture stock was £2,500,000.

Dealing with the proposals of the Bill, Counsel said they had been closely scrutinized by the London County Council, and had been agreed. They had also been agreed by all the local authorities concerned, except the Woolwich Borough Council, who objected to clause 20. The remainder of the Bill was unopposed. Running briefly through the unopposed portions of the Bill, Counsel said they provided for an adjustment of area between the South Metropolitan Gas Company and the Wandsworth, Wimbledon, and Epsom District Gas Company in one area; for the raising of an additional £1,000,000 capital; and for additional borrowing powers by the issue of redeemable preference or debenture stock. There was also a clause which provided that the standard dividend on new stock should be 5 p.ct.; and the Company, in order to keep all its stock of the same denomination, did not propose to take advantage of the clause in its Act of 1920, which provided that the standard dividend on new stock should be 6 p.ct. Other clauses related to the limit of dividend on the preference capital, and to other more or less minor matters.

Coming to clause 20, to which the opposition related, Counsel said this clause, if passed, would give the Company the right to lay mains in roads not dedicated to public use—in other words, private roads not taken over by the local authority—and to give a supply of gas at the request of the owner or occupier of any premises abutting on such roads. At present no gas undertaking could do this without Parliamentary authority; and most gas undertakings had this power. Under the Gas-Works Clauses Act of 1847, a gas undertaking could only break up public streets. As a matter of fact, clause 20 in the Bill was common form, and appeared in the Model Bill; and Counsel said he did not think he had ever come before a Parliamentary Committee armed with so many precedents. He had a list of no fewer than 151, and he was sure there were a great many more, because this list related only to the last twenty years. The Gas Light and Coke Company and the South Suburban Gas Company—the other two large London Gas Companies—had this power, and, as a matter of fact, there was no precedent for its refusal. Behind the opposition of the Woolwich Borough Council, however, there was a history; and that was why Woolwich was the only one of the ten Metropolitan Boroughs affected by the Bill appearing before the Committee. There were two circumstances concerning the opposition. One was that the Woolwich Borough Council had an electricity undertaking, and the other was that it had a housing estate at Eltham, the policy concerning which had been that the tenants on that estate should not be allowed to use gas for lighting.

In a detailed account of the correspondence, interviews, and discussions between the Woolwich Borough Council and the South Metropolitan Gas Company, Mr. McMillan related how the estate covered 334 acres and was purchased some time in 1920. It now consisted of between 1700 and 2000 houses, and in all the tenancy agreements was a clause forbidding the use of gas for lighting. Counsel went through the whole of the correspondence, which showed how, in the first place, the South Metropolitan Gas Company asked for facilities to lay mains on the estate and to pipe houses and supply fittings for lighting, heating, and cooking free of charge. The Council, however, refused to allow these facilities, and called upon the Company to lay mains for heating and cooking purposes. As a matter of fact, there was no legal liability on the Company to do this, because the houses on the estate were not within the statutory limit of 50 yards which made it compulsory on the Gas Company to give a supply. However, the Company went into the matter of the cost, and found that, for heating and cooking supplies, it would cost £30 12s. 6d. per house; and as, by removing the lighting, it was estimated that 50 p.ct. of the supply had been taken away, the Gas Company asked that the Council should pay £15 of the estimated expenses of piping each house. The reply of the Council was to ask for details of the proposed expenditure; but as the Company had, in view of the circumstances, made an application to the Ministry of Transport to be relieved of its powers to supply in this particular area, on the ground that the district was adequately supplied with electricity, the answer of the Company to the request of the Council for particulars of the proposed expenditure was to withdraw its offer.

Sir FRANK NELSON asked whether it was possible to give a comparison of the cost of electricity and gas at that time.

COUNSEL said evidence would be given on that point later.

Continuing his story of the sequence of events, Counsel mentioned that in the case of the Well Hall Estate some years previously, when a provision was made, through the medium of H.M. Office of Works, that the houses should be lighted by gas only, the Woolwich Borough Council objected that the tenants should be precluded from using electricity, and the South Metropolitan Company withdrew the privilege which it had secured, and allowed the Council freedom to compete. When this matter was brought to the notice of the Council in connection with the attitude in regard to the Eltham Housing Estate, the reply was that in the case of the Well Hall Estate the Council were merely contractors, whereas they were owners of the Eltham Estate.

The application of the Company to the Ministry of Transport for a removal of its powers to supply on the Eltham Estate did not reach an inquiry, because the Ministry of Transport considered that the Company could obtain what it was seeking in the Company's Bill which was shortly coming before Parliament. However, the clause in the Bill relating to the matter was subsequently withdrawn; and that aspect of the question disappeared altogether. In the meantime, continued Counsel, the Borough Council continued its policy not to allow tenants on the Eltham Housing Estate to use gas for lighting, and on more than one occasion requested the Company to proceed to lay mains for heating and cooking purposes. As, however, very few of the houses were within the statutory distance of a gas main, no action was taken, and the tenants were compelled to use inefficient and expensive electrical cooking apparatus. Many complaints were made with regard to this, and a large number of the tenants had resorted to oil stoves for cooking and heating, as the houses had not been provided with any means for burning other fuel. Subsequently the question of the Eltham Housing Estate got into the hands of the Ministry of Health through the medium of the subsidy, and the Council was informed that, unless, in the case of new houses that were being built in 1921, means were provided for gas lighting, the portion of the cost of the houses involved in the electrical installation would not be allowed in the housing scheme account for the purpose of subsidy. Notwithstanding this the Council persisted in its attitude, and to-day the tenants on the estate

were precluded from the use of any gas at all—first, because the Council would not allow gas for lighting purposes, and secondly because the Company did not see its way to lay mains and pipe the houses free of charge for heating and cooking purposes only.

The Hon. EVAN CHARTERIS said there were 65 houses on the estate which were within the statutory distance of a gas main.

Mr. MCMILLAN said there was a disagreement as to the number of such houses, but it might be taken at about 50 out of 2000. Continuing, he spoke of the petition that was presented to the Council in 1926 signed by 332 tenants out of 800 or 900 houses then complete, complaining of the conditions; a special point being made of the fact that it took 20 minutes to boil a kettle in the morning on the electrical apparatus provided by the Council.

The CHAIRMAN asked if the tenants alleged that they had signed their agreements without knowing what was in them.

Mr. MCMILLAN said they did not; but circumstances at that time were such that people were obliged to accept any terms in order to get a house at all. He went on to remark that, after the complaints of the inefficiency and costliness of the electrical cooking apparatus, the Borough Council's Electricity Department installed a new type of hotplate which it was hoped would overcome that difficulty; but the dissatisfaction continued, and the Council, in order to keep the Company out of the estate, had refrained from taking-over the streets and dedicating them to public use, because in that event the Company would be able to exercise the general powers it had, and lay mains and give a supply for all purposes.

The Hon. EVAN CHARTERIS said he could not agree with that, because a number of the streets had already been taken over, and there was a resolution of the Council to take over all the streets and dedicate them to public use as and when they were suitable.

Mr. MCMILLAN, referring to the Council's petition against the Bill, said that reference was specially made to the fact that many of the roads on the estate had not been dedicated to public use, and if, as it was suggested, all the roads were to be taken over, he could see no reason for this objection to clause 20, because when the roads were taken over the Company would be able to lay their mains without the permission of anybody, subject to the usual provisions of the Gas-Works Clauses Act. In the circumstances, the Company submitted to the Committee that the Council was acting unreasonably in its attitude towards the use of gas on the estate, and was depriving the Company of the very facility which the Company on its part, in relation to the Well Hall Estate, had given to the Council's Electricity Department. This action of the Council was a hardship upon the tenants and, moreover, was in defiance of the instructions of the Minister of Health. Perhaps, said Counsel, it was possible to link-up this attitude with the circumstances of the Council's electricity undertaking, which had been singularly unfortunate in the past. It was not until 1924, after many years existence, that it began to turn the corner financially. Even so, there was at present a deficit to be made up on the working of the undertaking of £188,000, to which the South Metropolitan Gas Company had had the privilege of contributing, because it was a large ratepayer in the borough; and while it was contributing to the deficit on the electricity undertaking, it was an unrepresented ratepayer on the Council. As a matter of fact, the Council, in its Electric Lighting Order of 1905, had the very power with regard to non-dedicated streets for which the Company was now asking; and a large number of electrical undertakings also had the same power. Another example of the attitude of the Council was at Newport (Mon.). In 1925 the Newport Corporation had a Bill in Parliament seeking powers to develop certain vacant lands and to build premises upon them subject to such terms, conditions, and restrictions as the Corporation might think fit. The Newport Gas Company, however, was vigilant in noticing this clause, because it had had experience with the Corporation with regard to certain housing schemes previously, when a restriction was placed upon the use of gas. Consequently the Newport Gas Company opposed the Corporation's Bill, and stated that it feared the tenants of premises on the land to be developed would be precluded from using the Company's gas. The result was that the Parliamentary Committee in that case inserted a provision in the Bill that in the development of this land at Newport there was to be no restriction as to the form of lighting or heating used in any premises erected upon it.

Concluding, Counsel said that the South Metropolitan Company asked for this power because every gas company that had asked for it had got it. It was improper that the housing subsidy should be used to subsidize another trading undertaking of the municipality, because, in point of fact, if this restriction was to be continued, it meant that part of the subsidy obtained from the Ministry of Health for the housing scheme would be used to instal electricity and prevent gas from having the opportunity to compete. Referring to the Council's petition and the statement of the facts given in it, Mr. McMillan said it was a partial account of the transactions, because no reference was made to the offer of the Gas Company to lay mains and pipe the houses free of charge if it were allowed to give a supply for all purposes.

Dr. *Charles Carpenter*, President of the South Metropolitan Gas Company, was then called to prove the preamble of the Bill.

The CHAIRMAN (interrupting) suggested that the whole point at issue was a matter of principle, and that it was not necessary to give any detailed evidence.

In these circumstances, Mr. McMillan did not put any questions in examination-in-chief.

The Hon. EVAN CHARTERIS cross-examined on behalf of the Council, and put it to Dr. Carpenter that no reply had been received to the request for details of the estimated expenditure of £30 12s. 6d. per house for heating and cooking purposes.

Witness replied that the Company had told the Council that its offer was withdrawn owing to the application to the Ministry of Transport in the circumstances explained by Mr. McMillan.

COUNSEL next asked Dr. Carpenter if he could point to a case in which the power asked for in clause 20 had been granted to a gas company in an opposed application or in similar circumstances to those which obtained at Woolwich, where the Council was the owner of a large estate.

Witness agreed that he could not.

This closed the case for the promoters.

POSITION OF THE COUNCIL EXPLAINED.

The Hon. EVAN CHARTERIS then addressed the Committee on behalf of the Council, and did not call any evidence. The South Metropolitan Gas Company, he said, was a commercial body which had worked well for the public and its shareholders, but he was certain that the Committee would not allow a large commercial undertaking of this character, merely because it was a commercial undertaking, to override the wishes of the local authority without sufficient reason being shown for doing so. When the reasons for the local authority's action in this matter came to be examined, the Committee would find that they were more adequate than might be supposed from the eloquent remarks of Mr. McMillan. The Model Clause stated that a supply could not be given in non-dedicated streets without the consent of owners *and* occupiers, but clause 20 asked that supply could be given with the consent of owners or occupiers, and the Council objected to the roads on its estate being broken up without its consent, and the same applied to any housing estates that might be built in the future. The large number of precedents referred to were of little value for the guidance of a Committee where opposition was brought forward; and the Model Bill was in no sense binding, nor was it even an indication of a principle to Parliamentary Committees. All it amounted to was that, if a Parliamentary Committee determined that a certain principle should be expressed in a Bill, the best way of expressing it was in the terms of the Model Clause. The case of Newport was exactly the opposite of the present case, because there the Newport Corporation was asking to be allowed to develop land, whereas in this case the Woolwich Council had already developed it, and tenants were in occupation. The reason which had operated in the minds of the Woolwich Council in its policy as regards the development of this estate was that it was not in the interests of public health, economy, management, and cleanliness that these small houses, constructed with the assistance of the subsidy, should be lighted by gas. There was no question of hostility to the Gas Company, but the Council had been guided by the fact that the rooms in these small houses were only 8 ft. high, and that to use gas for lighting purposes would add enormously to the dirt and cost of maintenance of the houses. In these circumstances the Council maintained that it was justified in insisting, in the interests of the tenants themselves, that electricity should be used for lighting, rather than gas. Had the Council wished to bolster up its electricity undertaking, as had been suggested, it would have precluded any possibility of the use of gas on the estate at all, whereas in fact it was willing that the Company should lay mains and supply gas for heating and cooking. It was due to the refusal of the Company that the Council had been forced to put in electric cookers and heaters. As a matter of fact, the Company, since the Bill had been presented, had added a proviso to clause 20 in favour of the railway companies, stating that the clause should not apply to any street belonging to or maintainable by a railway company, except with the consent of such company. This was practically the position of the Woolwich Council in regard to non-dedicated streets on the Eltham Estate, and any other housing estates that might be built in the future.

In answer to the Chairman, Counsel said that he was instructed that the Council intended to dedicate all the streets on the Eltham Estate in due course, and, further, that there was no intention of selling any of the houses on the estate. In other words, the Council would remain owners of the estate as a whole. It was anticipated that all the roads on the estate would be dedicated within about six months.

Mr. WELLOCK said this meant that the Company would have, in a short time, all the powers it was now asking for.

The room was then cleared while the Committee considered its decision.

THE COMMITTEE'S DECISION.

The CHAIRMAN, giving the Committee's decision, said that the Committee had considered this matter, and felt that, while an owner of an estate might be unwise in adopting the attitude of the Borough Council in this case, it did not think that power should be given to a Company to run mains into a property to supply gas at the request of an occupier when the owner declined to give his consent. The Borough Council was owner in this case; and although its action in the matter gave the Committee cause for anxiety, the Committee would pass the preamble of the Bill if the words "or occupier" in clause 20 were taken out.

This decision means, of course, that the consent of the Council must be obtained before mains can be laid on the Eltham Estate, while the streets are not dedicated to public use.

Mr. MCMILLAN said he took it that this decision only applied to the Woolwich area, and not to the whole of the Company's area.

The CHAIRMAN: Yes.

Discussion then took place as to whether the clause as modified by the Committee's decision was to apply only to the Eltham Estate or to future housing estates built by the Borough Council.

The CHAIRMAN pointed out that, though the opposition to the Bill specifically related to the Eltham Estate, the Committee was not likely to have a different opinion with regard to other estates built by the Council.

It was left for the parties to bring up the clause to give effect to the Committee's decision; and subject to this the Bill was ordered to be reported for third reading.

Imperial Continental Gas Association Dividend.—Subject to the verification of the accounts by the Auditors, and the approval of the proprietors, there will be paid, on May 23, upon the nominal amount of the issued capital stock as registered in the books of the Association on April 25, a final ordinary dividend for the year ended Dec. 31, 1927, at the rate of 5 p.ct. (actual), less income-tax, making, with the interim dividend of 5 p.ct. (actual) paid on Nov. 15, 1927, a dividend of 10 p.ct. for the year.

MISCELLANEOUS NEWS.

EUROPEAN GAS COMPANY, LTD.

ORDINARY GENERAL MEETING.

The Ordinary General Meeting of the Company was held on Tuesday, March 13, at the Offices, Montague House, Devonshire Square, London, E.C.—Mr. FRANK H. JONES, M.Inst.C.E. (the Deputy-Chairman), presiding.

The GENERAL MANAGER AND SECRETARY (Mr. F. Eliot Williams) read the notice convening the meeting.

The CHAIRMAN: Ladies and Gentlemen,—Before we proceed to the business of the meeting, I have one explanation to make to you. In consequence of the meeting to-day of a Committee of the House of Commons before whom he is giving evidence, Dr. Carpenter, our Chairman, who had fully intended to be here, has sent word that it is quite impossible for him to come along. He had, however, prepared some remarks upon the past year's working of the Company; and I think that, in the circumstances, instead of addressing you myself at such short notice, by far the better plan will be to ask the General Manager to read to you the Chairman's remarks.

Mr. ELIOT WILLIAMS thereupon read the following.

STATEMENT OF DR. CARPENTER.

Ladies and Gentlemen,—The balance-sheet and profit and loss account have been, for the first time, distributed with the annual report. They have not hitherto been circulated in this manner; but there appeared no adequate reason why the general custom of sending a copy of the accounts to every shareholder should not be followed by us, and the Board have therefore decided to abandon their previous practice, which was based upon habit rather than upon reason. I assume, therefore, that you will now take as read the report and accounts for 1927.

As the keynote of, or introduction to, my statement this morning, I do not think I can do better than quote a remark made by the Governor, Monsieur E. Moreau, at the annual meeting of the shareholders of the Bank of France: "The year 1927 has been for us," he said, "a year of transition, of adaptation, and of earnest consolidation." Work such as this cannot be spectacular—indeed, to the onlooker it may even appear uninteresting—and the operations of this Company are no exception to the rule.

Now, I need not remind you that we were a prosperous concern before the war, paying good dividends and setting aside appropriate reserves. War broke out, and when it was over we assumed, as many other undertakings did also, that a return to prosperity—indeed, to an even greater prosperity—would follow the advent of peace. There were those who had not forgotten that the industrial greatness of Germany was laid upon a foundation consolidated by the events of 1871. How was it to be supposed that the Allies would fare differently? I am bound to confess that in our own case we were a little slow to realize that the machine which functioned well for us in 1914 was hopelessly out of date for post-war conditions, when we need better working results, higher manufacturing efficiency, better systems of costing, and, above all, better commercial methods for the popularization and sale of our products. We are, as you know, the proprietors of concessions for supplying gas in eight important cities and towns of France; and the changed conditions of to-day require us to keep much more closely in touch with their working than was formerly necessary. To this end, our system of accounts has been revised, with a view to providing more detailed information, and furnishing results with greater rapidity.

The new plan, which was worked out with the expert advice of our Consulting Accountants, was started on Jan. 1, 1927, and has not only enabled the Board to follow the stations' working more closely, but has permitted us to put them before you more speedily. Our thanks are due both to Messrs. Price, Waterhouse, & Co., for their aid in devising and applying the system, and to our own accounting staff, both in France and in London, for the manner in which they have brought it into operation.

CONSTRUCTIONAL WORK.

What we have done for our accounts, we must do for our works; but while we can put aside a set of books and replace it by a more modern set, changes in the brick and iron of our works are longer and more complicated matters. The report refers to the construction which is being carried out at Nantes and at Caen, and there is little to add to the statement of fact contained therein. When the gasholder at Roche Maurice, near Nantes, and the connecting main thereto, are completed, it will be necessary to commence the construction of the new gas-works, which we are under obligation to have in action by June, 1934, in order that manufacturing operations may cease by that date at the existing works in the heart of the town. As it was doubtful whether the producing power at the present Nantes works would suffice to meet the consumption until 1934, and as the construction of additional retorts for so short a period would not have been economically justified, an auxiliary plant on the Strache system is being installed for temporary service; and this will in due course be dismantled and transferred to the works at Roche Maurice.

The Wimereux Works has now disappeared from our list of manufacturing stations. It was a small and uneconomical unit; and the district is now supplied from Boulogne, a special connecting main having been laid for the purpose.

In the interests of national defence, the French Government has made compulsory the extraction of benzole from the gas; and although, as gas suppliers, we do not welcome this measure, we are bound to comply with it. Much of the necessary plant for the purpose has been ordered, and will in due course be installed.

Reference has been previously made to the high figure of gas leakage; and unfortunately it is impossible to say, with any degree of confidence, that the situation is appreciably better. Steady progress has been, and is being, made with the repair and replacement of defective pipes; and there can be no doubt that in course of time the unavoidably heavy expenditure on these renewals will rectify the present faults in our distributing systems, with corresponding benefit to our figures for future years, both by improved working results and reduced expenditure for repairs.

COAL SUPPLIES.

Considerable difficulty was caused by the imposition by the French Government of a ban on the import of foreign coal except under licence; and although it was found possible to maintain supplies, many complications arose when the decree was first put into operation. This ban has now, happily, been removed. The French Government has also suspended the operation of the decree controlling the export of money from France, thus considerably facilitating our financial transactions. Government restrictions of this nature are, perhaps, more vexatious than hampering; but their removal is a real help to the simplification of our business.

The policy of disposing of the Company's fleet of colliers has been fully justified by the experience of the past year; the saving by chartering outside tonnage, as compared with running our own boats, amounting in 1927 to approximately £3500.

A special allocation to the redemption fund has been made in respect of Nantes, to provide for the fact that a considerable proportion of the capital invested in the old works will lose its value when, in accordance with our obligations, manufacturing operations are transferred to the new works at Roche Maurice. A similar allocation has been made in respect of Wimereux, on account of the shutting-down of the works there. It is, of course, very desirable that from time to time the amount of dead capital outstanding should be reduced to a minimum.

THE GAS CONSUMPTION BAROMETER.

Gas consumption is always a sensitive barometer of the state of trade, and in France more so, perhaps, than in this country, for economies are there made more drastically and maintained more deliberately than they are here. Our Managers generally have reported that money is scarce, and that there is "a general tightening of belts." It is not surprising, therefore, that there is a falling-off in the consumption of gas, in spite of an increase in the number of consumers; but, as stated in the report, the whole of the diminution is not due to this cause. In pursuance of the Board's policy of economy, the work of meter reading and collecting is now at most of the stations spread evenly over the whole month, instead of being carried out in a few days at the end of it, and there is an apparent loss of consumption in the first year in which the change is brought into operation. It is difficult to estimate this deficiency exactly; but in the year under review the new system was introduced at several stations, and probably accounts for nearly 2 p.ct. of the reduction of 4·85 p.ct. recorded in our report.

INCREASED PROFIT AND DIVIDEND.

Comparing the individual items with the figures of the balance-sheet on Dec. 31, 1926, there are not a great many striking changes, but those that exist are in the nature of improvements. The bank loan, for instance, has been reduced by £41,000, and now stands at £65,903, while the items of profit and cash in hand are both better. Sundry debtors are down substantially, from £152,762 to £71,724. This is due to the inclusion in the 1926 figures of the balance outstanding in respect of the sale of the boats, and also to a great extent to the change in the system of meter reading.

The profit is better for several reasons, the principal being the absence of fluctuations of the franc, which, for the first time since the war, has remained steady for a full year, and our operations and accounts have not suffered, in consequence, by the disturbances due to variations in the rate of exchange.

The effect of the lag in the application of the price formula has also upon this occasion favourably influenced our profit. Last year it was explained that, owing to gas prices being fixed on the basis of costs of materials and wages in the preceding period, the Company suffers when commodity prices are rising, because gas prices are too low in relation to current costs. The converse takes place when commodity prices are falling, and this is what happened in 1927. It is satisfactory to be able to record that our anticipations of improvement in this respect during the past year have been fulfilled.

The final result has been that our profits at the stations enable your Directors to recommend the payment of a dividend of 5 p.ct. for the year, free of income-tax, and the transfer of £11,000 odd to the general revenue fund, which will thus be increased to £22,476. It is, perhaps, well to repeat what I have said on previous occasions—namely, that the Board consider it essential to strengthen this fund, which has not only served a useful purpose in emergencies, but which it still may be necessary to call upon again in the future, for the purpose of making-up dividends or for other contingencies. Before the war, it stood at £107,741; and it would be a source of strength to the Company to achieve its gradual re-establishment at a substantial figure. For 1926, it will be remembered, we paid dividends at the rate of 1¼ p.ct. interim, and 1¼ p.ct. final. This year we have paid 2 p.ct. interim, and are proposing 3 p.ct. final—making a total of 5 p.ct. for the year, against 3 p.ct. a year ago.

CREATION OF A PENSION FUND.

In reviewing the Company's general position, the Board have been impressed with the fact that there is a not inconsiderable

liability in respect of pensions to the staff and workmen, for which no reserve has hitherto been made. This is not of great importance, so long as all the stations are running and adding their quota to the profits of the undertaking; but the fact must be faced that a day may come when it will be difficult to renew one or other of the concessions. There will then still be a pension liability in respect of that station, without any corresponding profits, and the pensions on account of a dead station would thus become a charge against the profit from the remaining ones. The present charge for pensions is not heavy, and can well be borne out of the revenues of the undertaking. But it would be a measure of common prudence to build-up a reserve for meeting such obligations, in respect of stations where the concessions may not be renewed. You will notice on the balance-sheet an item of £81,954 7s. 6d., Insurance and Guarantee Fund, of which £27,786 represents provision against marine and fidelity risks, which for some time now have been regularly covered by outside insurance. We propose that this amount be withdrawn therefrom, and set aside as the nucleus of a Pension Fund, investments to that value being earmarked for the purpose, and the dividends credited and re-invested, and that a percentage of salaries and wages —which on present figures will amount annually to some £2000 to £3000—be added to the fund, which should be allowed to accumulate, and not be drawn upon until either a concession falls in and pensions become payable, with no corresponding profits to meet them, or the fund becomes capable of meeting all such charges.

FRIENDLY SPIRIT MAINTAINED.

The shareholders will be interested to hear that the friendly spirit which has for so many years characterized the relationship between our Managers abroad and their staffs shows no signs of weakening. In continuance of the policy of encouraging recreative association amongst employees, the Board have, during the past year, co-operated in the formation of a sports club at Boulogne, where a suitable ground has been placed at the disposal of the members; and a very enthusiastic football club has been formed there. One has also been started at Nantes, and the Directors hope that the initiative taken at these stations may be followed elsewhere.

Of greater value still would be the application to our various groups of employees abroad of some system of profit-sharing, by which their interests and those of the Company might be linked together. Your Directors are sympathetically interested in such alliances between Capital and Labour in this country, and France already furnishes some excellent examples herself of the successful adoption of profit-sharing. That none of these pertains to the gas industry there should not prove any discouragement, when the progress made therein in England is borne in mind.

THE COMPANY'S PROSPECTS.

It may be asked: "What are this Company's prospects for the future?" It is, of course, very dangerous to prophesy, especially when so much depends on factors entirely outside the control of the Board. Affairs in France certainly look rosier. But the improvement in the value of the franc, and its subsequent stability, have been followed by an adjustment of the internal and external purchasing values of money, which unfortunately has been accompanied by a general slackening of trade and industry. While the situation is far from being serious—there are now only 14,408 people registered as out of work, while about a million foreign workpeople are still employed—the fact remains that the boom period seems to have passed, and from various sources we hear that trade is slack.

It is unlikely that actual stabilization will take place until after the coming elections in April of this year; but the best informed opinion seems to be that stabilization cannot then be long delayed. Although we have had *de facto* stabilization of the franc since early in 1927, *de jure* stabilization, when it comes, will be received with general relief, though there may probably be some temporary difficulty in adjusting wages and retail prices. Stabilization, of course, we shall welcome; and the sooner the attendant disturbances are got over, the better, so that industrial and private consumers can settle down to their trades and businesses, and resume their normal consumption of gas. Stabilization, however, will probably, in France as in other countries, involve at least a temporary disturbance of trade, and the burdens of taxation are likely to be heavy for many years to come.

The rate at which the franc is eventually stabilized will not be without effect upon our profits. At the present moment, every franc earned is worth just about one-fifth of what it represented in pre-war days, so that if we had stabilization at about 125 it would mean that to earn our pre-war sterling profits we should have to earn five times our pre-war profits in francs; and it would be too much for us to expect to do this. But given stability, and freedom from extraneous disturbances, there seems no reason why we should not go on making a moderate profit and build-up again a modest degree of prosperity. After all, the Company has only just emerged from the most critical period of its history, and we cannot expect to see it restored to full vigour without a term of careful nursing and convalescence. We should be thankful that its vitality has not been impaired more than has been the case, by the strain which it has suffered.

I began by quoting from Monsieur Moreau. May I conclude by again applying his precepts to ourselves, in saying that our "work of reconstruction will be continued throughout the present year, towards a normal régime and a sound economic equilibrium."

The CHAIRMAN said it now became his duty to move:

> "That the report of the Directors and the statement of accounts for the year ended the 31st of December last be received and adopted."

Mr. W. G. BRADSHAW formally seconded the resolution.

A TRIBUTE TO CAREFUL ADMINISTRATION.

Mr. E. L. BURTON said he would like to express what he was sure was the feeling of all the shareholders present—namely, regret that Dr. Carpenter should not have been able to be with them that day, though they had had read to them the lucid and comprehensive statement of the Company's affairs which he had prepared. There were at least two matters in the report which he ventured to think all the proprietors would fully endorse. The first of these was the intention of the Directors to strengthen the reserves of the Company and to found a pension fund. Secondly, everyone must hope that the Chairman's anticipations, although modest, in regard to the recovery of the Company would be borne out in the course of this year and the years to come. He himself was a new proprietor, with perhaps a considerable interest; but he was very much impressed with the care that was given to the administration of this Company, as evidenced by the exhaustive statement which had just been read to them.

The resolution was then carried unanimously.

THE DIVIDEND.

On the proposition of the CHAIRMAN, seconded by Mr. A. M. PADDON, it was agreed:

> "That the interim dividend of 4s. per share, paid on the 1st of October last, less 6d. per share for French Stamp and Transfer Duty in respect of all shares held in France, is hereby confirmed. That a final dividend for the year ended the 31st of December last, at the rate of 6s. per share, be now declared; such final dividend on all the shares of the Company to be paid on the 31st of March next, the whole out of interest and profits and free of income-tax, subject, however, to a deduction for French Stamp and Transfer Duty of 6d. per share in respect of all shares held in France."

RE-ELECTIONS.

The CHAIRMAN said it was now his pleasure to propose the re-election of the retiring Directors, Mr. W. G. Bradshaw, C.B.E., and Mr. C. P. Crookenden, F.C.A. Both these gentlemen were fully conversant with the working of the Company; and it would be unnecessary for him to tell the shareholders why they should re-elect them.

Mr. PADDON, in seconding, remarked that the proprietors could not have listened to the statement by the Chairman without realizing how valuable to the Company must be such an experience of banking affairs as Mr. Bradshaw possessed. There were, too, intricacies in the matter of accounts with which they could not do better than have a chartered accountant like Mr. Crookenden to deal.

The motion was agreed to, and acknowledged by Mr. BRADSHAW on behalf of his colleague and himself.

The Auditors (Messrs. G. C. Goldsmid and W. B. Brady) were re-appointed, on the proposition of Mr. A. E. JOHNSTON, seconded by Mr. H. C. BURTON, and the re-election was acknowledged by Mr. GOLDSMID.

VOTES OF THANKS.

The CHAIRMAN moved that the best thanks of the meeting be given to the staff of the Company in London and abroad for their services during the past year. He said it afforded him particular pleasure to propose this because he probably had known the members of the staff here and in France as long as anybody. In the London office extreme efficiency prevailed; and the Board knew from month to month exactly where the Company stood, in regard to making a profit. Such a thing would, of course, not be possible without the loyal co-operation of those who were working for the Company in France. He was sure the proprietors would wish particularly to thank the local Managers, who were gentlemen occupying a very different position from anyone in this country. They not only managed the works in their particular town, but they had authority to spend money—subject, of course, to supervision on the part of the head office. The Company were extraordinarily lucky in their Managers, who always seemed to get on well with their staffs and the workmen. Although their employees did not enjoy some of the advantages possessed by many gas workers in this country, very little trouble arose with them, and all deserved the hearty thanks of the meeting.

Mr. BRADSHAW said he had great pleasure in seconding the resolution, and in adding his testimony to the eloquent eulogy which Mr. Jones had pronounced. He was confident that they were excellently and most efficiently staffed both at home and abroad.

The resolution having been unanimously endorsed by the meeting,

Mr. ELIOT WILLIAMS, in acknowledging the vote on behalf of the staff in London and France, said this vote was very much appreciated, particularly by those abroad, who were, in a way, out of touch with the shareholders. It gave them deep satisfaction to realize that they were thought of when the proprietors were considering the results of the year's working.

Mr. E. L. BURTON proposed a vote of thanks to the Chairman and Directors for their very efficient services in administering the affairs of the Company during the past year. The control by the Board of a Company such as this operating abroad must be fraught with difficulties which could not possibly attach to home undertakings; and after what they had heard that day they must feel fully satisfied that all these difficulties were most ably met.

Mr. JOHNSTON seconded the vote, which was heartily passed.

The CHAIRMAN said he would see that Dr. Carpenter was notified of the resolution of confidence that had been passed. Really, at times since the war one had hardly known what to do with this Company; but to-day, owing to the new system which Mr. Williams was working so well, things were not anything like so difficult. Daylight could be seen now, whereas a year or two ago it could not.

Wandsworth Gas Company's Stock Issue.—Tenders for £200,000 of 5 p.ct. debenture stock of the Wandsworth, Wimbledon, and Epsom District Gas Company were opened on March 15, and prices ranged from par downwards. The amount was over-subscribed, and allotments were made in full to all those above £96 17s. 6d.

Cast-iron case pattern—24-hour or 7-day chart—any range up to 400 lbs. per sq. in.

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SHEFFIELD GAS COMPANY.

Annual General Meeting.

The Ordinary Meeting of the Company was held at the Offices, Commercial Street, Sheffield, on Monday, March 12—Col. H. K. STEPHENSON, D.S.O. (the Chairman), presiding.

The SECRETARY AND GENERAL MANAGER (Mr. Ralph Halkett) read the notice convening the meeting and the Auditors' report.

The CHAIRMAN, in moving the adoption of the report and balance-sheet for the past year, said the accounts reflected the aftermath of the coal stoppage of 1926. On capital account, there had been expended not far short of £11,000, chiefly on extension of mains in connection with the development of new building estates. Expenditure under that head was likely to continue for a considerable period.

The revenue account showed a balance on the year's working of £188,308, as compared with £129,231 for 1926. To this amount must be added the balance brought forward from the previous year, after payment of dividend, of £69,321, as well as a sum of £10,331 for interest, &c., making a total of £267,960. After charging against this total mortgage and debenture interest, consumers' benefit, and one year's dividend at basic rate, there remained to be carried forward £85,973, which was £16,652 more than a year ago.

INCREASED DIVIDEND.

In view of the progressive decreases in gas prices, the Board had felt some increase in dividend might reasonably be expected. It was therefore decided to pay an interim at the rate of 6 p.ct., and it was now proposed to repeat this distribution, making 6 p.ct. for the year. The ability to pay any higher dividend than the basic one of 5 p.ct. depended entirely on the success of the Company in reducing the price of gas below the basic rate of 7d. per therm. The Directors were glad to find themselves at the end of September in a position to make still further reductions, with the result that to-day their smallest domestic consumer paid 1d. per 1000 c.ft. less than before the coal stoppage, while their largest industrial consumers got a reduction of no less than 5d. on all gas supplied after the first 6 million c.ft. In other words, their prices ranged from 6·8d. per therm, or 2s. 10d. per 1000 c.ft., down to 3d. per therm, or 1s. 3d. per 1000 c.ft. He thought such low rates would make it a paying proposition for many of the big works to take larger supplies of gas, the quality and regularity of which left nothing to be desired. If present anticipations of trade revival were realized, they might look for a further improvement in sales this year.

COKE OVEN GAS SUPPLY.

Satisfactory arrangements had been concluded with the Nunnery Colliery Company and the Thorncliffe Coal Distillation Company for coke oven gas, each providing for a supply of 3½ million c.ft. a day. The Company would then be taking a total quantity of over 12 million c.ft. of coke oven gas per day. Situated as they were in the heart of a coke oven district, where surplus gas was available, it appeared to the Board that the undertaking ought to avail itself of supplies to a much greater extent than originally contemplated. He was satisfied that gas undertakings were the natural market for coke oven gas; and the Board hoped that, by entering into these new agreements, they might be able to reduce prices still further, and assist the industries of Sheffield. It should not be forgotten that, although the cost of living had decreased so greatly, gas workers' wages were still 100 p.ct. above pre-war level.

POSITION OF SMALL GAS UNDERTAKINGS.

He had referred on other occasions to the danger to small gas undertakings in country districts from the competition of cheap electricity distributed from large generating centres, and had suggested that such undertakings must either put their house in order or amalgamate with larger concerns, as otherwise it was difficult to see how they could survive. That danger was much more imminent to-day than it was two years ago. The capital of the undertakings he had in mind usually stood high, and they had no money available for bringing their plant up to date in order to maintain a cheap and satisfactory quality of gas or to supply customers with the latest and most economical appliances. Yet, because for the present they still had a monopoly, they charged high prices and paid good dividends, without apparently realizing the competition they would shortly have to meet. In the opinion of those best able to judge, unless the small gas undertakings were reorganized on modern lines, many must go out of business when their consumers were offered the alternative of comparatively cheap electricity in place of dear and often inferior quality gas. Their salvation lay in amalgamation with, or sale to, larger undertakings having command of the necessary capital. The terms, however, upon which they could effect such amalgamation or sales would become increasingly less favourable as the competition of electricity drew nearer. If large gas undertakings were to come to the rescue, they must have the opportunity of giving consumers a sufficient supply of good and cheap gas before the alternative of electricity had materialized. The various schemes of distribution of electricity throughout the country were approaching maturity; and it was high time that, by means of high-pressure mains, gas was distributed from large centres on a similar scale.

GROWTH OF DEMAND FOR INDUSTRIAL PURPOSES.

In spite of the still unsatisfactory condition of Sheffield trade, there was an increase in the demand for gas for industrial purposes. A larger number of gas-fired furnaces had been fixed than during the preceding year, while similar furnaces which had been shut-down had been reconditioned and brought into use by the Company's furnace staff. They had also converted other furnaces for use with gas instead of solid fuel. A further point of interest was the increase in the number of processes for which the Company's gas was now used as fuel. They were at present engaged in designing a furnace for

annealing articles up to 40 ft. in length. This furnace would consume approximately 4000 c.ft. of gas an hour, and when once lighted would continue to work day and night. This process in the past had been carried out exclusively in furnaces fired with solid fuel. This increased demand for gas for industrial purposes afforded gratifying evidence of the soundness of the Company's policy in charging a specially low rate for gas sold in large quantities, and at the same time providing a highly-trained staff of experts to demonstrate its economic uses.

In conclusion, the Chairman paid tribute to Mr. Halkett's able management, and to the efficient and loyal co-operation of all ranks.

TRADE NOTES.

Road Tars and Binders.

Messrs. Ellis, Key, & Co. inform us that they have commenced business as chemical merchants—specializing particularly in road tars and binders—at 2, South John Street, Liverpool.

"Renold Standard Design Drives."

The advantages of transmitting power by chain are well set out in a new handbook entitled "Renold Standard Design Drives," published by Hans Renold, Ltd., Didsbury, Manchester.

CONTRACTS OPEN.

Coal.

The Newbury Corporation invite tenders for the supply of Derbyshire gas nuts. [See advert. on p. 766.]

Gasholders, &c.

The Penrith Gas Committee invite tenders for a spiral guided holder. [See advert. on p. 766.]

The Gas Committee of the Borough of Wokingham invite tenders for the supply, delivery, and erection of a spiral guided gasholder and steel tank, also for concrete foundations. [See advert. on p. 766.]

Purifier, Washers, Exhausters, Coke Bus, &c.

Tenders for the above and other plant, and the dismantling of existing apparatus, are invited by the Gas Committee of the Penrith Urban District Council. [See advert. on p. 766.]

Steam Locomotive.

The Gas Committee of the Manchester Corporation invite tenders for the supply and delivery of a saddle tank steam locomotive. [See advert. on p. 766.]

REDUCTIONS IN THE PRICE OF GAS.

Coleraine.

At Coleraine the price of gas supplied through ordinary meters has been reduced from 3s. 9d. to 3s. 4d. per 1000 c.ft.; the reduction to apply as from the beginning of the present year. This brings the charge down to the pre-war figure—a fact which evoked feelings of gratification at the last meeting of the Urban District Council.

Doune.

In Doune the price has been reduced from 7s. 11d. to 7s. 6d. per 1000 c.ft.

Haworth.

The price in July, 1926, was 2s. 6d. per 1000 c.ft. To meet the increased cost of coal during the strike, the price was increased on Oct. 1, 1926, to 2s. 10d., and on Jan. 1, 1927, to 3s. 1d. During the past year new purifiers have been installed and a considerable amount has been spent on repairs and renewals, new mains, &c. The Council, at their meeting on Tuesday, March 6, confirmed the minute of the Gas Committee reducing the price of gas, as from April 1, from 3s. 1d. to 2s. 7d. per 1000 c.ft., with the usual discounts of 5 p.ct. The Council congratulated the Committee on the successful year's working of the Department, and special tribute was paid to the services of the Engineer and Manager (Mr. Osman White).

Kilsyth.

The Kilsyth Town Council have decided to reduce the price by 2½d. per 1000 c.ft., which will make the charge 2s. 8½d. for power and 3s. 1½d. for lighting.

Kingsbridge.

The Kingsbridge Gas Company announced to the local Urban District Council, on March 14, a reduction in the price of gas from 5s. 10d. to 5s. 6d. per 1000 c.ft.

GAS REGULATION ACT APPLICATIONS.

SPECIAL ORDER.

Bilston Gas Light and Coke Company.

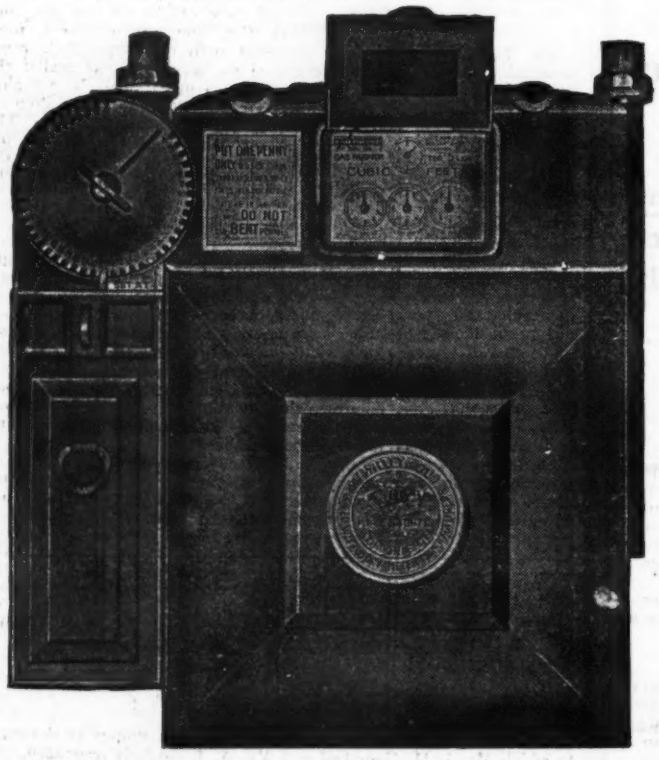
To define the Company's limits of supply, to increase the borrowing powers, to authorize the use of scheduled land for gas purposes, and to make various other provisions.

DECLARATIONS OF CALORIFIC VALUE.

Burnham Gas Company, Ltd.—450 B.Th.U., in substitution for 480 B.Th.U. (July 1.)

Lymm Urban District Council.—500 B.Th.U. (April 1.)

PERFECTION.



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Valve Positively Opens at 4 c.ft.

Price Changed *in situ* by the most rapid method devised.

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GAS COMPANIES' RESULTS FOR 1927.

ABERYSTWYTH.

At the Annual Meeting of the Aberystwyth Gas Company, the announcement was made of a reduction in the price of gas from 1s. to 10d. a therm. The following dividends were declared: On the original shares, 15 p.ct. per annum; on the new shares, 10½ p.ct.; on the preference shares, 5 p.ct.; and on the debenture bonds, 4½ p.ct. (all less income-tax).

BATH.

The sales for 1927 are the highest in the history of the Company. A final dividend of 5 p.ct. per annum (less income-tax) was declared.

BISHOP'S STORTFORD.

At the Annual Meeting of the Bishop's Stortford, Harlow, and Epping Gas and Electricity Company, it was announced that an agreement had been entered into with the North Metropolitan Electric Power Supply Company for the supply of current in bulk. The sales of gas were 6 p.ct. more than in 1926, and the sales of electricity 17·24 p.ct. more. The following dividends were declared for the half-year ended Dec. 31 (all less income-tax): On the "A" ordinary stock, £3 7s. 6d. p.ct.; on the "B" ordinary stock, £3 2s. 6d. p.ct.; on the "C" 5 p.ct. preference stock, 2½ p.ct.; and on the "D" 4 p.ct. preference stock, 2 p.ct.

BRENTWOOD.

The Directors of the Brentwood Gas Company have declared final dividends which, with the interim dividends already paid, make 8 p.ct. on the original stock and £5 12s. p.ct. on the additional stock (both less income-tax) for the year.

CHELTENHAM.

At the Annual Meeting of the Cheltenham Gas Light and Coke Company, a reduction in the price of gas to 9d. per therm, to take effect after the reading of the meters for the March quarter, was announced; and a dividend of 5 p.ct. on the paid-up consolidated ordinary stock was declared.

CHESTER.

The Chester United Gas Company's sales in 1927 were most satisfactory. The balance of net revenue account carried forward, after payment of 3½ p.ct. dividend on the ordinary stock, making 5½ p.ct. for the year, was £9842.

COLCHESTER.

The gas sold was greater by 1·7 p.ct. than in 1926, and during the year the number of cookers on hire increased from 5706 to 6371, and the number of fires on hire from 333 to 427. In addition, 57 cookers, 125 fires, and 61 geysers were sold. Final dividends were declared of 6 p.ct. per annum on the preference stock, £7 2s. 6d. on the "A" shares, and £4 19s. 9d. p.ct. on the "B" shares.

CORBRIDGE.

At the Annual Meeting of the Corbridge Gas Company, Northumberland, it was reported that the gross profits were £2089. A dividend of 6 p.ct., less tax, was agreed to, and £350 was transferred to the renewal fund account. More gas was sold than in the previous year; and it was stated that the works and plant would be extended during the coming summer.

DORCHESTER.

An increase in the sales of gas amounting to 8·2 p.ct. was reported at the Annual Meeting of the Dorchester Gas and Coke Company, Ltd. Dividends of 10 p.ct. on the ordinary capital (free of income-tax), and 6 p.ct. on the preference capital (less income-tax) were declared.

DOVER.

At the Annual Meeting of the Dover Gas Company, a final dividend of £3 15s. p.ct. (less tax) was declared, making 7½ p.ct. for the year.

EAST GRINSTEAD.

The profit for the year available for dividends was £9473, out of which the Directors recommended payments for the half-year ended Dec. 31 last of 5 p.ct. on the original "A" stock and "A" shares, and 3½ p.ct. on the "B" and "C" shares (less income-tax), which, with the interim dividend paid on Sept. 1 last, made 10 and 7 p.ct. respectively for the year. This left a balance to be carried forward of £6062.

The increased consumption of gas, amounting to nearly 20 p.ct. in the past two years, had reached a stage which demanded an extension of the manufacturing plant. Mr. D. T. Livesey, who retired from the office of Engineer, Manager, and Secretary after 34 years' service with the Company, had been elected to the Board. Mr. John Hyde, of Chesterfield, had been appointed to succeed Mr. Livesey, and would take up his duties on April 1.

Mr. W. H. HILLS (the Chairman) announced that the Directors proposed to reduce the price of gas by ½d. per therm, as from Jan. 1 last, so bringing the price to 3s. 10·2d. per 1000 c.ft. The parting with Mr. Livesey was an important incident in the history of the Company. No Company could have been served with a more sincere regard for its interests. Happily his resignation did not entirely sever his connection with them, for they would have the benefit of his advice and experience.

The CHAIRMAN asked the shareholders to confirm the appointment of Mr. Livesey as Managing Director of the Company. This was confirmed.

ELLAND.

The Elland-cum-Greetland Gas Company, on Feb. 29, declared a dividend of 6½ p.ct. It was reported to the meeting that during the year there had been price reductions for gas equal to 9d. per 1000 c.ft., and there was a likelihood of a further reduction in the near future.

FENNY STRATFORD.

Satisfactory increases in the sales of gas and the number of consumers were reported at the Annual Meeting of the Fenny Stratford Gas Light and Coke Company, Ltd., when a dividend of 8 p.ct. (less tax) was declared. During the year the Directors purchased centrally situated premises in order to provide a showroom, offices, stores, &c.

GLOUCESTER.

In proposing the adoption of the Directors' report and statement of accounts at the Annual Meeting of the Gloucester Gas Light Company, the CHAIRMAN (Mr. J. H. Jones) said the accounts were satisfactory. They showed a balance carried to profit and loss account of £17,526, and a net profit to be carried to the next account (subject to the half-year's dividend to Dec. 31, 1927) of £8439. Consumers had increased by 400, and their total output had increased by 8 million c.ft. The present price of gas was 3s. 6d. per 1000 c.ft. They had appointed a district inspector, whose duty it would be to go round, free of charge, to make suggestions as to what it would be advisable to do to improve the supply of gas in private houses. They had also started a system of training young employees, and were glad that those who had started upon the course were taking great interest in it. They wanted throughout England to revive the pride of craft, which tended to make every business a joy, instead of a burden. He (the Chairman) felt certain that in gasfitting there was a great deal to be learnt, and a great deal in which to take a real interest.

The report and statement of accounts were adopted, and a dividend of 5 p.ct., less income-tax, on the consolidated stock was declared.

HARTLEPOOL.

The profit of the Hartlepool Gas and Water Company, including £6292 brought forward, was £51,589. After paying a final dividend of 2½ p.ct., less tax, making 5 p.ct. for the year, £14,117 remained to be carried forward. Income from rental of meters and appliances on hire again showed a steady increase.

HASTINGS.

A further reduction in the price of gas was announced at the Annual Meeting of the Hastings and St. Leonards Gas Company. Mr. W. J. GLENISTER (Chairman) said that during the year there had been a 2½ p.ct. increase in the sales of gas, representing 14 million c.ft. Since Mr. C. F. Botley had been appointed in 1913, the sale of gas had increased by 111 millions. Interim dividends (less income-tax) were paid as follows: £6 15s. p.ct. per annum on the 5 p.ct. converted stock; and £6 4s. 6d. p.ct. on the 5 p.ct. additional stock. The Directors recommended final dividends at the same rates.

IPSWICH.

At the Annual Meeting of the Ipswich Gas Light Company, Mr. HENRY WOODALL, the Chairman and Managing Director, said that the accounts showed an available balance of £16,245. There had been an increase in the quantity of gas sold of over 4 million c.ft. During the year two substantial reductions were made in the price of gas, which was now 9·4d. per therm. The new tankless gasholder, which was brought into use on Sept. 29 last, had entirely answered their expectations. Formerly, at times of their peak load, they were unable to give adequate pressures throughout the whole of their area of supply, but this was no longer the case, and at all times of the day and night consumers could now obtain all the gas they needed. Another advantage was that the gas delivered from the holder was dry gas, as compared with that from their other holders, which were water sealed. Gas engineers would realize the importance of this, and the consequent saving of cost in pumping syphons and clearing services. No piece of apparatus Mr. Prentice had ever erected had so amply satisfied him as this, the latest. The Chairman moved that dividends at the rate of £6 2s. 6d. p.ct. per annum on the consolidated stock, and 5 p.ct. per annum on the redeemable stock be paid, making £6 5s. p.ct. and 5 p.ct. for the year. The motion was approved.

ISLE OF THANET.

Presiding at the Annual Meeting of the Isle of Thanet Gas Light and Coke Company, Mr. WALTER HILLS, the Chairman, said there had been a continuous increase in the business of the Company in all directions; the sale of gas having reached just over 460½ million c.ft., representing an increase of nearly 7 p.ct. on the previous year. The profit accruing from the year's working was £12,633, against £9269 for the previous year. The carry-forward into 1928 was £5562, after meeting the dividends and all standing charges. They had 5500 cooking stoves out on hire, and 1500 gas fires. Additional meters had been fixed during the year to the number of 283, bringing the total to close on 10,000. During the year the splendid total of 1157 cookers, fires, geysers, &c., were sold, either directly or on hire-purchase, through their showrooms. Such had been the degree of their progress during the past year that the Directors had determined to make a further reduction of 1d. per therm in the price of gas, to take effect from the next reading of the meters. This would be the second reduction within the last few months, bringing the price down to the pre-strike figure of 9d. a therm. Subject to the approval of the shareholders, they had decided to donate 250 guineas, by two yearly payments, to the New Hospital Building Fund. The Company's staff had also contributed over £100 to the Fund, and were still collecting.

The report and accounts were unanimously adopted.

The CHAIRMAN moved that a dividend be declared at the rate of 7 p.ct. for the year 1927, less the interim dividend.

Mr. W. TOMLIN seconded.

Mr. WILLIAM BOOTH REEVE proposed a vote of thanks to the staff, to which Mr. J. M. Campbell and Mr. A. J. Stickels responded.

LEATHERHEAD.

At the Half-Yearly Meeting of the Leatherhead Gas and Lighting Company, it was stated that the sales of gas for the past half-year showed an increase of 12 p.ct. over the six months ended December, 1925. Dividends at the rate of 6½ p.ct. per annum on the redeemable preference stock, and 7 p.ct. per annum on the ordinary shares (both less tax) were declared.

LITTLEHAMPTON.

Mr. W. HARWOOD, J.P., the Chairman of the Littlehampton Gas Company, presiding at the Annual Meeting, reported an increase in the sales of gas. Dividends were declared of 11 p.ct. on the "A" shares, 8 p.ct. on the "B" shares, and 5½ p.ct. on the "C" shares (all less tax.)

MATLOCK.

At the Annual Meeting of the Matlock and District Gas Company—Mr. TOM WRIGHT presiding—it was stated that the profit on the past year's working was £9949, to which was added the unappropriated balance from the previous year of £8677, giving a disposable balance of £18,627. Against this was charged the interim dividend of £1076, debenture interest £390, and bank interest £379, leaving for disposal £16,781. The Directors recommended the payment of a dividend of 6$\frac{3}{16}$ p.ct. for the year, less tax, which would absorb £1587 and leave £15,193 to be carried forward.

The Chairman stated that since the coal strike they had reduced the price of gas by 1s. 5d. per 1000 c.ft.

OXFORD.

Continued progress was reported at the Annual Meeting of the Oxford Gaslight and Coke Company. Alderman F. W. ANSELL, J.P., the Chairman, said that the increase in sales during 1927 amounted to over 7 p.ct. Mr. W. E. Caton, the General Manager and Engineer, explained that during the year the number of consumers had increased by 771, and the number of cookers on hire and sold outright by 965. At an extraordinary meeting, the Chairman moved that the Directors be authorized to prepare and put in force a co-partnership scheme—a motion which was carried unanimously.

PENISTONE.

At the Annual Meeting of the Penistone and District Gas Company a dividend at the rate of 10 p.ct. per annum (less tax) for the half-year ended Dec. 31 was declared.

PUDSEY.

The balance of the net profit, after deducting the interim dividend at the rate of 10 p.ct. per annum, was £10,983; and at the Annual Meeting a final dividend at the same rate was declared.

READING.

In moving the adoption of the report and accounts at the Annual Meeting of the Reading Gas Company, Mr. T. E. HEWETT, the Deputy-Chairman, said that the increase in the sale of gas was over 67 million c.ft. At the end of 1927 they were supplying 25,567 consumers. The number of gas cookers on hire was 21,656, and of fires 12,576. The capital expenditure during the year was £60,595. The bulk of this was in respect of a new vertical retort installation which was brought into use last November; and he could not speak too highly of the way the work had been executed by the contractors—Messrs. West's Gas Improvement Company, Ltd.—to the requirements and satisfaction of their Engineer and Manager, Mr. D. H Helps. Dividends were declared at the statutory rates.

REDHILL.

In moving the adoption of the report and accounts at the Annual Meeting of the Redhill Gas Company, Mr. W. LEES STENNING, J.P., the Chairman, said that, after successive reductions in price, their charge for gas was lower to-day than before the industrial upheaval of 1926. The number of consumers, 10,455, was an increase of 547 during the year, and the output of gas showed an expansion of over 5½ p.ct. This followed an increase of 7·69 p.ct. in 1926. The net result of the year's trading was that, after paying all fixed charges, they were able to recommend a dividend upon the ordinary stock at the rate of 5½ p.ct. per annum, carrying forward an amount of £1706 to the credit of next year's account.

Mr. W. H. BENNETT (the Managing Director), in seconding the motion, spoke of some of the benefits which had arisen through the larger scale of operations under which they were working in consequence of the merger of Companies they had taken over during the last four or five years.

ROWLEY REGIS AND BLACKHEATH.

The Rowley Regis and Blackheath Gas Company, at their Annual Meeting, resolved to pay dividends of 7½ p.ct. on the ordinary "A" shares, and 5½ p.ct. on the ordinary "B" shares (free of tax), and to carry forward to next year's account £169.

SOUTHAMPTON.

Submitting their report for the year ended Dec. 31 last, the Directors express their deepest regret at the death on Jan. 29 of this year of the Chairman, Mr. J. C. Moberly. An interim dividend of 2½ p.ct., less income-tax, was paid in September last; and the Directors recommend that a further similar dividend be now paid, making in all the maximum dividend of 5 p.ct. per annum, less income-tax, for the year. They also recommend that £5000 be transferred from profit and loss account to the reserve fund. The output of gas was well maintained during the year; the total quantity sold being 1,320,680,700 c.ft. The price was reduced in April, and again in July last, by 1s. per 1000 c.ft.; and a further reduction of 4d. per 1000 c.ft. will be made in April. The calorific quality of the gas supplied has been kept up to the declared value; the certified average of the daily tests being 465 B Th.U., or 5 B.Th.U. higher than that required.

SOUTHGATE.

In 1927 the Southgate and District Gas Company sold 4·5 p.ct. more gas than they did in 1926; and the price has been reduced to 10·8d. per therm. At the Annual Meeting it was agreed that the following dividends for the half-year ended Dec. 31 last should be paid: On the preference capital, 5 p.ct. per annum; on the original capital, 10 p.ct. per annum; and on the additional capital, 7 p.ct. per annum (all less income-tax).

TUNBRIDGE WELLS.

A reduction in the price of gas of ⅛d. per therm, as from the March readings of the meters, bringing the price to 9d., was announced at the Annual Meeting of the Tunbridge Wells Gas Company. Mr. HAROLD A. BEECHING, who presided, said that the sales of gas had increased by 2½ p.ct. The available balance was £18,740, and the following dividends were declared: On the consolidated ordinary stock, 13¾ p.ct. per annum; on the consolidated "B" stock, 11 p.ct.; and on the consolidated "C" and "D" stocks, 10½ p.ct. per annum for the half-year ended Dec. 31 last.

TYNEMOUTH.

At the 62nd Annual Meeting of the Tynemouth Gas Company (which was the final one prior to the undertaking being taken over by the Newcastle and Gateshead Gas Company), it was reported that the revenue was £160,145, and the expenditure £145,637, leaving a balance of profit of £14,508. The revenue from gas and rentals amounted to £130,314, against £124,646 in 1926; and the returns from residuals were £20,815 against £26,607. The number of ordinary and prepayment meters in use on Dec. 31 last was 27,162, an increase of 925 on the year. Dividends were approved at the rate of 5 p.ct. on the consolidated and new ordinary stock, and of 4 p.ct. on the new preference stock.

UXBRIDGE.

During 1927 the Uxbridge, Maidenhead, Wycombe, and District Gas Company enjoyed an increase in the sales of gas of 4·85 p.ct. Dividends (less income-tax) of 5 p.ct. per annum on the 5 p.ct. preference stock, 5½ p.ct per annum on the 5½ p.ct. preference stock, and £6 11s. 3d. p.ct. per annum on the ordinary stock were declared.

VENTNOR.

At the Annual Meeting of the Ventnor Gas and Water Company, the Directors expressed their appreciation of the efficient services rendered by their Managing Director, Mr. J. S. Ineson, who after 45 years' continuous service had found it necessary to tender his resignation. Dividends (less income-tax) of 8 p.ct. on the original shares and £5 12s. p.ct. on the additional shares were declared for the year ended Dec. 31 last.

WESTON-SUPER-MARE.

A further record in the sales of gas by the Weston-super-Mare Gaslight Company was established in 1927; the increase over 1926 being 3·2 p.ct. At the Annual Meeting, dividends of 5 p.ct. on the ordinary stock, 6½ p.ct. on the 6½ p.ct. redeemable preference stock, and 6 p.ct. on the 6 p.ct. redeemable preference stock were declared for the half-year ended Dec. 31, all less income-tax.

WEYMOUTH.

The Weymouth Consumers' Gas Company had a good year in 1927; the quantity of gas sold showing an increase of 5·18 p.ct. over the year 1926. The Directors declared a dividend on the ordinary stock at the maximum rate of 5 p.ct. per annum.

WHITBY.

An increase in the sales of gas was reported at the Annual Meeting of the Whitby Gas Company, when final dividends (less tax) of 3 p.ct. on the original capital and £2 2s. p.ct. on the additional and new capital were declared.

WINCHESTER.

The price of gas was reduced by 1d. per therm at Michaelmas, and the Directors of the Winchester Water and Gas Company, at their Annual Meeting, announced that a further reduction would be made at Lady Day. Dividends (less tax) were declared as follows for the half-year ended Dec. 31: On the preference stock, 4 p.ct. and 5½ p.ct. per annum; and on the consolidated ordinary stock, 5 p.ct. per annum.

WOKING.

The Woking District Gas Company sold slightly more gas in 1927 than in 1926. At the Annual Meeting, the following dividends (less income-tax) were declared: On the "A" ordinary stock, 10 p.ct. per annum; on the "B" ordinary stock, 7 p.ct. per annum; on the "C" preference stock, 5 p.ct. per annum; and on the 8 p.ct. redeemable preference stock, 8 p.ct.

WOLVERHAMPTON.

Presiding at the Annual Meeting of the Wolverhampton Gas Company, Mr. A. B. HANBURY-SPARROW, J.P., the Chairman, said that the net profit for the year was £47,247. There was an increase in the sale of gas of 27⅞ million c.ft., or practically 2½ p.ct. The Board, he said, had had before them the entire remodelling of the existing offices, workshops, and showrooms, which were now inadequate. Plans had been prepared, and they were going ahead with the scheme. At the beginning of the year they inaugurated a superannuation scheme on the contributory basis for the benefit of the staff, which had been much appreciated.

Dividends of 3 p.ct. for the half-year on the preference stock, 5½ p.ct. on the consolidated stock, and 3½ p.ct. on the new ordinary stock were declared.

WORTHING.

At the Annual Meeting of the Worthing Gas Light and Coke Company, it was stated that sales of gas in 1927 showed an increase of 6½ p.ct. It was announced that the price of gas would be reduced to 10·6d. per therm as from March 31. The following dividends were declared for the half-year ended Dec. 31: On the preference stock, 5½ p.ct. per annum, on the consolidated ordinary stock, 7 p.ct. per annum (both less income-tax).

STOCK MARKET REPORT.

DEALINGS on the Stock Exchange last week were distinguished by the activity in Wireless and Cable shares. It was taken for granted that both parties to the arrangement would benefit by the fusion; and in the scramble for shares the popular favourites were practically forgotten. More caution was exercised towards the close of the week when it was realized that the meaning and effect of the scheme was not at all clear.

The Foreign Market, owing to the foreign political uncertainties, was dull, and Home Rails, other than District and Undergrounds, decidedly gloomy.

The Gas Market was well supported. Inquiries were numerous, and transactions quite normal. The attention drawn to the Maidstone stock last week had a good effect, the quotation being marked up 3 points to 108-111. This price is still materially below the real value of the stock, and a further improvement is anticipated. Hornsey is another stock that will justify attention. The stock was marked up 4 points to 78-81; and though on the average price the yield is £6 5s. 9d. p.ct. only, the prospects, having regard to the financial strength of the Company, are particularly good. Portsmouth 4 p.ct. stock was marked up 2 points, the 5 p.ct. maximum 3 points, and the two Brighton stocks and the Croydon sliding-scale 2 points, all of which are attractive investments.

The following transactions were recorded during the week:

On Monday, Alliance and Dublin 97½, 98, 98¼, Brighton and Hove 6 p.ct. 114½, 115½, European 8 7/16, 8½, 8 11/16, Gas Light and Coke 18s. 7½d., 18s. 9d., 18s. 10½d., 19s., 3½ p.ct. maximum 62½, 4 p.ct. preference 78½, 79, 79½, Imperial Continental 150½, 151½, 3½ p.ct. debenture 68, Montevideo 93¾, Primitiva 20s. 10½d., 21s., 21s. 1½d. 21s. 2½d., 21s. 3d., 4 p.ct. debenture 76½, South Metropolitan 104½, 104¾. Supplementary prices, Colonial new ordinary (issued at 22s., 12s. paid) 1s. 1½d. pm., 13s. 3d., new 8 p.ct. preference (issued at 21s. 6d., 11s. 6d. paid) 11s. 7½d.

On Tuesday, Alliance and Dublin 98, 98¼, 99, 4 p.ct. debenture 66, Bombay 22s. 4½d., Bournemouth 4 p.ct. debenture 77½, Commercial 97½, 98, Croydon maximum dividend 83, European 8⅝, Gas Light and Coke 18s. 7½d., 18s. 10½d., 3½ p.ct. maximum 62⅝, 6 p.ct. Brentford debenture 103½, 104½, Imperial Continental 150½, 3½ p.ct. debenture 70, Montevideo 93⅜, Primitiva 20s. 9d., 20s. 10½d., 21s., 21s. 1½d., 21s. 3d., South Metropolitan 104, 104¼, 105, South Suburban 5 p.ct. 107, Swansea 7 p.ct. preference 101½. Supplementary prices, Redhill 5½ p.ct. preference "A" 100.

On Wednesday, Aldershot 71½, Alliance and Dublin 97½, Bombay 22s. 7½d., Bournemouth "B" 12 1/16, 12½, Commercial 3 p.ct. debenture 59½, European 8½, 8⅝, Gas Light and Coke 18s. 6d., 18s. 9d., 3½ p.ct. maximum 62⅝, 63½, 64, 4 p.ct. preference 79, Imperial Continental 150½, 151½, Primitiva 21s., 21s. 1½d., 21s. 3d., South Metropolitan 104½, 3 p.ct. debenture 59½, 6½ p.ct. debenture 100, Wandsworth new 100, 100¾.

On Thursday, Bournemouth "B" 12½, Cardiff 7½ p.ct. debenture 102, Colonial 23s. 4½d., 8 p.ct. preference 21s., Commercial 98½, 99, 99½, European 8½, 8 11/16, Gas Light and Coke 18s. 6d., 18s. 8½d., 18s. 9d., 18s. 10½d., 3½ p.ct. maximum 64, 4 p.ct. preference 79, Hornsey 3½ p.ct. 80, 80½, Imperial Continental 152, 153, Malta and Mediterranean 5 13/32, Primitiva 21s., 21s. 1½d., 21s. 3d., South Metropolitan 104½, 104¾, 104⅞, 105, 3 p.ct. debenture 60, 60½, Swansea 7 p.ct. preference 101½, Wandsworth "B" 111½. Supplementary prices, Liverpool 5 p.ct. 87½, Newport (Mon.) 76½, 77, Worthing 94, 94½.

On Friday, Brighton and Hove 6 p.ct. 116½, Colonial 8 p.ct. preference 21s. 3d., Commercial 98½, 99¼, 99½, European 8 3/32, Gas Light and Coke 18s. 6d., 18s. 7½d., 18s. 9d., 4 p.ct. preference 78½, 78⅝, 79, 79¼, 79⅜, 79½, Primitiva 21s., 21s. 0½d., 21s. 1½d., 21s. 3d., 21s. 4½d., South Metropolitan 105, 105¼, 3 p.ct. debenture 60, South Suburban 5 p.ct. 106, 5 p.ct. debenture 94½, Uxbridge 5 p.ct. 88, Wandsworth "B" 112½, new ordinary 100½. Supplementary prices, Bath 87½, Hornsey 5 p.ct. 105, 105½, Montevideo 6 p.ct. debenture 98.

In Lombard Street monetary conditions were fairly comfortable. Old and new loans were quoted at 3½ p.ct., falling later to 3¼ p.ct. Treasury Bills were allotted at £4 2s. 0·96d. p.ct., being nearly 11d. p.ct. below the previous week's rate.

On the Foreign Exchange Market, the New York rate rose slightly to 4.87 11/16, the premium on Canadian currency widening to 3/16c. Belgas advanced slightly to 35.07, but other European currencies moved against this country; Dutch florins to 12.12½, German marks to 20.40½, and Swedish crowns to 18.18. Italian lire remained at 92 13/16; pesetas closed at 28.96; and French francs were steady at 124.

Silver was firmer on Chinese purchases at 26 7/16d. per oz., and Gold remained at the nominal price of 84s. 11½d. per oz.

The Bank Rate is 4½ p.ct., to which it was reduced from 5 p.ct. on April 21. Bankers' deposit rates are 2½ p.ct. The deposit rates of the discount houses are 2½ p.ct. and 2¾ p.ct.

Issue.	Share.	When ex-Dividend.	Dividends. Prev. Hf.Yr	Dividends. Last Hf. Yr.	NAME.	Quotations. Mar. 16.	Rise or Fall on Week.	Transaction Lowest and Highest Prices.
£			% p.a.	% p.a.				
171,978	Stk.	Feb. 9	5	5	Aldershot 5 p.c. max. C.	70—75	..	71½
412,992	"	"	4	4	Do. 4 p.c. Pref.	69—72	..	..
1,551,988	"	Sept. 29	7	7	Alliance & Dublin Ord.	95—99	..	97½—99
274,000	"	Jan. 12	4	4	Do. 4 p.c. Deb.	64—67	..	66
600,000	"	Mar. 8	7	7	Barnet Ord. 7 p.c.	109—112*	..	..
522,554	"	Oct. 13	1/7½	1/7½	Bombay, Ltd.	21/6—23/6	..	22/4½—22/7½
800,000	1	Mar. 8	8½	8½	Bournemouth 5 p.c.	12¼—13¼*	+⅛	..
170,000	10	"	7	7	Do. B 7 p.c.	12—12¼*	+⅛	12 1/16—12⅛
600,050	10	"	6	6	Do. Pref. 6 p.c.	10¼—11*	..	..
375,030	10	"	3	3	Do. 3 p.c. Deb.	56—59	..	..
50,000	Stk.	Jan. 12	4	4	Do. 4 p.c. Deb.	76—79	..	77½
162,025	"	"	7⅛	7½	Brighton & Hove 6 p.c. Con.	115—118*	+2	114½—116½
357,900	"	Mar. 8	6/8/6⅔	6⅔	Do. 5 p.c. Con.	103—106*	+2	..
341,880	"	"	..	..	Bristol 5 p.c. max.	88—89a	..	..
1,327,500	"	Feb. 23	5	5	British Ord.	113—116	..	..
855,000	"	Sept. 29	7	8	Do. 7 p.c. Pref.	114—117	..	..
100,000	"	Dec. 22	7	7	Do. 4 p.c. Red. Deb.	72—75	..	..
150,000	"	"	4	4	Do. 5 p.c. Red. Deb.	93—96	..	..
200,000	"	"	—	33/2	Cape Town, Ltd.	8—9	..	..
100,000	10	Nov. 24	8	6	Do. 4½ p.c. Pref.	6¼—7¼	..	..
100,000	10	Oct. 27	4½	4½	Do. 4½ p.c. Deb.	72—77	..	..
150,000	Stk.	Dec. 22	4½	4½	Cardiff Con. Ord.	98—101	..	..
626,880	"	Feb. 23	6	6	Do. 7½ p.c. Red. Deb.	101—104	..	102
927,960	"	Jan. 12	7½	7½	Chester 5 p.c. Ord.	86—91b	..	..
187,150	"	Feb. 23	5	6½	Colombo Ltd. Ord.	31/—33/-	..	..
79,185	1	Oct. 13	†2/-	†2/-	Do. 7 p.c. Pref.	20/—22/-	..	..
94,496	1	"	1/4½	1/4½	Colonial Gas Assn. Ld. Ord.	24/—26/-	..	23/4½
375,402	1	Oct. 13	1/9½	1/9½	Do. 8 p.c. Pref.	21/—23/-	..	21/—21/3
187,848	1	"	1/7⅛	1/7⅛	Commercial Ord.	97—100	..	97½—99½
2,073,280	Stk.	Feb. 23	5	7	Do 8 p.c. Deb.	57—60	..	59½
415,000	"	Dec. 22	8	8	Continental Union, Ltd.	28—33	..	..
800,000	"	Sept. 29	‡1	‡1	Do. 7 p.c. Pref.	83—93*	..	..
800,000	"	Mar. 8	7	7	Croydon sliding scale	105—108*	+2	..
787,560	"	Mar. 8	6¼	7	Do. max. div.	81—84*	..	83
403,100	"	"	5	5	Derby Con.	110—115e*	..	..
492,370	"	Mar. 8	7	10	Do. Deb.	71—73e	..	..
400,000	"	Dec. 22	4	4	East Hull Ord. 5 p.c.	76—79*	..	..
800,000	"	Mar. 8	5	5	Eastbourne 5 p.c. Deb.	90—95	..	..
50,000	"	Dec. 22	5	5	European, Ltd.	8 9	−⅛	8⅜—8⅝
1,902,180	10	Sept. 29	‡3	‡4	Gas Light & Coke 4 p.c. Ord.	18/6—19/-f	−/3	18/6—19/-
19,704,480	Stk.	Feb. 9	5	5/1/4	Do. 8½ p.c. max.	62—64	..	62⅜—64
2,600,000	"	"	3½	9½	Do. 4 p.c. Con. Pref.	77—80	..	78½—79½
4,157,020	"	"	4	4	Do. 3 p.c. Con. Deb.	60—62	..	..
5,802,630	"	Dec. 22	3	3	Do. 6 p.c. Br'tl'd Rd. Db.	102—105	..	103½—104½
1,161,315	"	"	6	6	Do. 5 p.c. Red. Deb.	99—101	..	..
1,443,770	"	"	5	5	Do. 7½ p.c. Ilford Deb.	..	..	..
49,000	"	"	7½	7½	Hastings & St L. 5 p.c. Conv	87—90*	..	..
82,500	"	Mar. 8	6⅔	6⅔	Do. 8½ p.c. Conv.	68—71*	..	..
248,740	"	"	5½	5½	Hongkong & China, Ltd.	12½—13½	..	..
70,000	10	Oct. 18	†10	†10	Hornsey Con. 3½ p.c.	78—81*	+4	80—80½
172,300	Stk.	Mar. 8	5	5	Imperial Continental Cap.	150—154	+1	150½—153
1,976,000	"	Nov. 10	10	10	Do. 3½ p.c. Red. Deb.	68—70	+1	68—70
223,130	"	Feb. 9	8½	8½	Lea Bridge 5 p.c. Ord.	94—97*	..	..
335,949	"	Mar. 8	7	7	Liverpool 5 p.c. Ord.	87½—88½b	..	..
3,145,907	"	Feb. 23	5½	5½	Do. 7 p.c. Red. Pref.	104—106b	+1	..
600,000	"	Sept. 29	7	7	Maidstone 5 p.c. Cap.	108—111	+3	..
165,736	"	Feb. 23	9	8	Malta & Mediterranean	5½—5⅝	..	5 17/32
15,000	5	Dec. 22	†7	†8	Montevideo, Ltd.	93—94	..	93½
641,920	Stk.	Nov. 24	†7	†5	Newcastle & Gateshead Con.	16/3—16/9d/*	+1½	..
2,061,815	"	Mar. 8	5	5	Do. 4 p.c. Pref.	65½—67½d*	+½	..
860,929	"	"	4	4	Do. 3½ p.c. Deb.	66½—67½d	..	..
601,705	"	June 29	3½	3½	North Middlesex 5 p.c. Con.	91—94*	..	..
131,780	"	Mar. 8	6/18/0	6/18/0	Oriental, Ltd.	116—121	..	..
800,000	"	Nov. 24	7	9	Plym'th & Ston'house 5 p.c.	102—107	..	..
188,130	"	Dec. 22	7½	7½	Portsm'th Con. Stk. 4 p.c. Std.	101—104	+2	..
414,800	"	Feb. 23	7½	7½	Do. 5 p.c. max.	77—80	+3	..
336,732	"	"	5	5	Primitiva Ord.	20/6—21/6	..	20/9—21/4½
2,334,464	1	—	—	—	Do. 4 p.c. Red. Deb.	92—95	..	..
247,500	100	Dec. 1	4	4	Do. 4 p.c. Red. Deb. 1911	74—76	..	..
695,000	Stk.	Jan. 26	4	4	Do. 4 p.c. Cons. Deb.	74—76	..	76½
423,183	"	Dec. 22	4	4	San Paulo 6 p.c. Pref.	8½—8¾	..	..
150,000	10	Sept. 29	6	6	Do. 5 p.c. Red. Deb.	46—48	..	..
125,000	50	Jan. 3	5	5	Sheffield A	102—104e	..	..
370,000	Stk.	Sept. 8	5½	5½	Do. B	102—104e	..	..
419,988	"	"	5½	5½	Do. C	102—104e	..	..
1,047,000	"	"	5½	5½	South African	4—6	..	..
90,000	10	May 26	4	6	South Met. Ord.	103½—105½	..	104—105½
5,909,895	Stk.	Feb. 23	5	7½	Do. 6 p.c. Irred. Pf.	105—111	..	..
500,000	"	"	—	6	Do. 3 p.c. Deb.	59—62	..	59½—60½
1,995,445	"	Jan. 12	3	3	Do. 6½ p.c. Red. Db.	99—101*	..	100
734,000	"	Mar. 8	6½	6½	South Shields Con.	110—112d	+1	..
91,500	"	Feb. 23	8½	8½	South Suburban Ord. 5 p.c.	104—107	..	106—107
1,943,795	"	Feb. 23	6½	6½	Do. 5 p.c. Deb.	93—95	..	94½
868,337	"	Dec. 22	5	5	South'mpton Ord. 5 p.c. max.	79—82	..	..
647,740	"	Sept. 8	5	5	Do. 4 p.c. Deb.	72—75	..	..
131,375	"	Dec. 22	4	4	Swansea 7 p.c. Red. Pref.	100—103*	..	101½—101½
350,000	"	Mar. 8	7	7	Do. 6½ p.c. Red. Deb.	99—102	..	..
200,000	"	Dec. 22	6½	6½	Tottenham District A 5 p.c.	110—115	..	..
130,000	"	Feb. 23	7½	7½	Do. B 3½ p.c.	92—95	..	..
882,275	"	"	6½	6½	Do. 5½ p.c. Pref.	95—98	..	..
180,000	"	"	6½	6½	Do. 4 p.c. Deb.	74—77	..	..
181,258	"	Dec. 8	4	4	Tynemouth Con. and New Uxbridge, Maidenhead, & Wycombe 5 p.c.	77—79d*	−1	..
259,251	"	Mar. 8	5	5	Do. 5 p.c. pref.	87—90*	..	88
289,094	"	Mar. 8	6½	6 5/16	Wandsworth, Wimbledon, and Epsom—	83—88*	..	..
68,380	"	"	5	5	Wandsworth A 5 p.c.	129—134*	..	..
80,000	"	Mar. 8	8½	8½	Do. B 3½ p.c.	111—116*	..	111½—112½
355,898	"	"	7	7	Do. C and New	98—103*	..	100—100½
432,585	"	"	5/19/0	5/19/0	Do. Wimbledon 5 p.c.	106—111*	..	..
352,000	"	"	6½	6½	Do. Epsom 5 p.c.	112—117*	..	..
98,000	"	"	7½	7½	Do. 5 p.c. Pref.	86—91*	..	..
200,000	"	"	5	5	Do. 3 p.c. Deb.	57—60	+1	..
88,416	"	Dec. 22	3	3	Do. 4 p.c. Deb.	76—79	+1	..
284,743	"	"	4	4				

Quotations at:—a.—Bristol. b.—Liverpool. c.—Nottingham. d.—Newcastle e.—Sheffield. f.—The quotation is per £1 of Stock. * Ex. div. † Paid free of income-tax. ‡ For year.

*** In our "Stock Market Report" last week, through a clerical error in the paragraph commencing "On Tuesday," a transaction in British Gas was recorded at 111½. This should have been 113½.—ED. G.J.

COAL TRADE REPORTS.

From Our Own Correspondents.

NORTH-EAST COAST.

There is little change to report. Dullness in all sections of the market has continued, though a slightly better feeling was reported towards the week-end. A few prompt orders came in, but generally speaking the demand both for early and for forward positions is at a very low ebb. Orders are still going for Polish and Silesian coal which have always been regarded as assured to this district. Collieries here, however, are still making every effort to maintain prices, even at the cost of idle time, encouraged by vague rumours of rising costs and possible labour troubles in the Ruhr, and the idea that the subsidy system in Poland cannot continue indefinitely.

Additional worries during the week have been caused by discontent with the new wages rates, which has manifested itself in some cases in sectional strikes, while in others there has been restriction of output on the part of the men. Notices have had to be given in some instances, but the reduced output is more than sufficient to meet the demand.

Gas coals, apart from the best grades, are very dull. Wear Specials are nominally 15s. 9d. to 16s.; best qualities quote 14s. 9d. to 15s.; and others 13s. to 13s. 6d. Durham coking is extremely quiet, and best brands are obtainable at about 13s. 3d. Bunkers are asking 14s. 3d. to 15s., according to place of shipment, for best brands, others being 13s. to 13s. 6d. Northumberland steams are still holding for the agreed minimum prices, from 13s. 6d. for best screened downwards. Demand for gas coke is very quiet, 21s. f.o.b. being the nominal quotation for shipment.

YORKSHIRE AND LANCASHIRE.

The majority of gas concerns are making inquiries for deliveries of coal to commence some time ahead. This is evidently in view of the probable operation of the new marketing scheme about to be launched. The general uncertainty as to the actual working results to be obtained under the new scheme is causing anxiety throughout the coal trade, from owners to distributors. It is held to be necessary to get the scheme into operation without further delay in order to stabilize what is now a very unsteady market generally.

Industrial fuel is maintaining recent figures; but the export trade continues abnormally low, buyers abroad awaiting, apparently, the result of the negotiations between the coal owners and the exporters.

Recent reductions in the price of some secondary qualities of domestic fuel have been maintained, and these qualities are principally in demand.

The following are the Humber bunker and export prices (f.o.b. usual shipping ports):

South Yorkshire—Hards, Association, 15s. to 15s. 3d.; screened gas coal, 15s. 6d. to 16s.; washed trebles, 16s. to 16s. 3d.; washed doubles, 14s. 6d. to 14s. 9d.; washed singles, 14s. 3d. to 14s. 9d.; washed smalls, 11s. 6d. to 11s. 9d.; smithy peas, 17s. 6d. to 18s. 6d. per ton.

West Yorkshire—Hartley's (f.o.b. Goole), 14s. to 15s.; screened gas coal, 14s. 6d. to 15s. 6d.; washed trebles, 15s. to 16s.; washed doubles, 14s. 6d. to 14s. 9d.; washed singles, 14s. 3d. to 14s. 9d.; washed smalls, 11s. to 11s. 6d.; unwashed trebles, 14s. 9d. to 15s. 3d.; unwashed doubles, 11s. to 11s. 3d.; rough slack, 9s. 6d. to 10s.; coking smalls, 9s. to 9s. 6d. per ton.

Derbyshire and Nottinghamshire—Top hards, 15s. to 16s.; washed trebles, 15s. 6d. to 16s.; washed doubles, 15s. to 15s. 6d.; washed singles, 14s. 9d. to 15s. 3d.; washed smalls, 11s. to 11s. 6d.; rough slack, 9s. 9d. to 10s. per ton.

Yorkshire, Derbyshire, and Nottinghamshire—Screened steam coal, 14s. to 14s. 6d.; gas coke, 21s. to 24s.; furnace coke, 16s. 9d. to 17s. 6d. per ton.

In Lancashire, industrial fuel is in poor request. Quotations are: Lancashire best house, 31s. to 32s.; seconds, 27s. to 28s.; common, 19s. to 21s.; kitchen, 22s. to 24s.; Yorkshire selected house, 31s. to 34s.; best house, 26s. to 28s.; cobbles, 16s. to 20s.; washed doubles, 13s. to 14s.; washed singles, 12s. to 13s.; rough slack, 7s. 6d. to 9s. 6d. per ton in wagons at pit.

MIDLANDS.

Treacherous March weather has given a little more movement to the house coal market. Stocks in consumers' hands had been allowed to run so low that frost and snow had an immediate effect on demand. The effect was not so sustained, however, as to be appreciable at the pits, except for a few which are very largely dependent upon the trade in domestic fuel. Merchants were very glad to get an opportunity of relieving stocks at wharves, and to add something to the meagre turnover. It need hardly be added that prices remain where they were.

The demand for industrial fuel is as quiet as formerly. The blast-furnaces in the Midlands have no share in the improved conditions which have resulted in an advance of 1s. in Cleveland pig iron. Such expansion of trade as is visible in other directions is too inconsiderable and fitful to make any impression on the fuel consumption. Stacks are less plentiful in some districts than in others; but there is no indication anywhere of any market tension.

It is more than usually difficult just now to indicate price levels—so much depending upon the circumstances of individual collieries. The general tendency is against the seller; requirements which are not covered by contracts being readily met by the spot lots with which the market abounds. There has been a flicker of demand for bakers' nuts from London buyers, Warwickshire collieries securing a large part of the business.

CURRENT SALES OF GAS PRODUCTS.

The London Market for Tar, Tar Products, and Sulphate.

LONDON, *March* 19.

The market for pitch is quiet, and the price continues nominal at about 65s. per ton.

Creosote is steady at about 8¾d. per gallon.

Tar spirits also remain unaltered; pure benzole being 1s. 5d. to 1s. 6d. per gallon, pure toluole about 1s. 10d. per gallon, and 95/160 solvent naphtha 1s. 3d. per gallon.

Pyridine is about 6s. per gallon.

Tar Products in the Provinces.

March 19.

Generally speaking the markets for tar products remain unchanged. The price of pitch is unaltered, and the somewhat improved demand referred to last week continues.

There is a fair amount of demand for creosote, both for home and for export.

Water-white products are generally dull; but there is a little demand for pure products. The request for crude carbolic acid continues good.

Cresylic acid is still in good demand for both prompt and forward delivery. Further business has been done in crystals carbolic at ruling prices.

There is still some demand for pure naphthalene at fair prices.

The average prices of gas-works products during the week were: Gas-works tar, 46s. 6d. to 51s. 6d. Pitch—East Coast, 60s. to 62s. 6d. f.o.b. West Coast—Manchester, 57s. 6d. to 60s.; Liverpool, 60s. to 62s. 6d.; Clyde, 62s. 6d. to 65s. Benzole, 90 p.ct., North, 11¼d. to 1s. 0¼d.; crude, 65 p.ct. at 120° C., 9d. to 9¼d., naked at makers' works; 50/90 p.ct., naked, North, 1s. 2d. to 1s. 3d. Toluole, naked, North, 1s. 3d. to 1s. 4d. nominal. Coal-tar crude naphtha, in bulk, North, 7¾d. to 8d. Solvent naphtha, naked, North, 8¾d. to 9¼d. Heavy naphtha, North, 8¾d. to 9¼d. Creosote, in bulk, North, liquid, 7¼d. to 7¾d.; salty, 7¼d. to 7¼d.; Scotland, 7¼d. to 7¾d. Heavy oils, in bulk, North, 8¾d. to 9¼d. Carbolic acid, 60 p.ct., 2s. 3d. to 2s. 4d. prompt. Naphthalene, £13 to £15; salts, £5 to £5 10s., bags included. Anthracene, "A" quality, 2½d. per minimum 40 p.ct., purely nominal; "B" quality, unsaleable.

Redhill Preference Stock Issue.—Tenders for £25,000 of 5½ p.ct. preference "A" stock in the Redhill Gas Company were received by the Directors on the 17th inst., when the whole amount offered was allotted at prices ranging from £105 p.ct. down to the minimum of £99 10s.

Stoke Gas Department Centralization Scheme.—The Rt. Hon. Stanley Baldwin (the Prime Minister) has agreed to carry out the opening function in connection with the centralization scheme of the City of Stoke-on-Trent Gas Department. The ceremony will take place on Friday, April 27.

Capital Issue for Haslemere.—As will be seen from our advertisement pages, Messrs. A. & W. Richards are making an issue by tender, on behalf of the Directors of the Haslemere and District Gas Company, of £2850 of 5½ p.ct. perpetual debenture stock (minimum price of issue £95 per £100) and £5000 of "B" ordinary stock (minimum price of issue par), ranking for a maximum dividend of 7 p.ct. equally with the existing stock now receiving this rate.

Mr. Stringer's Lecture at Bristol.—The Bristol Gas Company, who are always to the fore in keeping their showrooms and fitting staffs conversant with the latest practice in gas burning apparatus, recently arranged through their Secretary and Commercial Manager, Mr. S. E. Halliwell, for a lecture by a member of the technical staff of Radiation, Ltd., on the subject of principles governing the design and construction of gas burners as applied to cookers, fires, and water heaters. Mr. Halliwell introduced the lecturer, and Mr. Conway, Superintendent of the Fittings Department, presided. There was an excellent attendance, and the subsequent discussion gave ample evidence of the keenness of those present to familiarize themselves with the latest gas appliances.

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